TRUSTEES.

1897.

President:
C. MORTON STEWART.

Treasurer:
FRANCIS WHITE.

Secretary:
LEWIS N. HOPKINS.

Members of the Board:*

Lewis N. Hopkins,
Francis White,
James Carey Thomas,†
C. Morton Stewart,
Joseph P. Elliott,
J. Hall Pleasants,

ALAN P. SMITH,
JAMES L. McLANE,
W. GRAHAM BOWDOIN,
WILLIAM T. DIXON,
BENJAMIN F. NEWCOMER,

The President of the University, ex-officio.

COMMITTEES.

Executive Committee:

James Carey Thomas,                      Francis White,
James L. McLane,                          C. Morton Stewart, ex-officio.
Benjamin F. Newcomer,

The President of the University, ex-officio.

Finance Committee:

Francis White,
J. Hall Pleasants,

C. Morton Stewart, ex-officio.

Building Committee:

J. Hall Pleasants,
James L. McLane,

C. Morton Stewart, ex-officio.

♦Arranged in the order of their accession to office.
†Died, November 9, 1897.
REPORT.

To the Trustees of the Johns Hopkins University:—

Gentlemen:

I have the honor to present my twenty-second Annual Report as President of the Johns Hopkins University.

The academic year which closed September 1, 1897, was free from any extraordinary changes. The generous contributions of citizens of Baltimore, to which reference was made in the last report, enabled the Trustees to carry forward the work of the year without contraction, but no funds have been available for expansion. All the officers of the University were invigorated by the liberal, spontaneous, and timely support which came from the community when the payment of dividends on the preferred stock of the Baltimore and Ohio Railroad was suspended. Many of the contributors were those who had already been our liberal benefactors; and another noteworthy characteristic of the subscription was the number of young men who participated in it—men of moderate pecuniary resources, full of enthusiasm and confidence. Many of our own alumni contributed to an alumni fund; and a large number of the graduates of the Baltimore City College, by their generous gifts, showed their appreciation of the mutually serviceable relations of the two institutions.
On the first of January the contributors were invited to meet the Trustees and Faculty in an academic festival, when formal acknowledgments were made of the benefits conferred upon the University by these timely subscriptions. Speeches and songs enlivened the festivity.

Nevertheless, great anxiety is still felt in regard to that part of the fund which was placed by the original benefactor in the stock of the Baltimore and Ohio Railroad. The University has lost an income of $150,000 per annum from this one source, which it regularly received during the early years of the foundation. It is easy to see what might be done if such a sum could now be added to our income—how many improvements might be made, what enlarged opportunities could be here afforded for the advancement of knowledge and the education of youth. Fortunately, the sale of Clifton to the city of Baltimore has been of the greatest advantage to the University, as the income derived from this source is now an important part of our annual resources. As the students were deprived, by this sale, of the field where they had engaged in athletic sports, the gymnasium has been reconstructed and a "cage" for winter practice has been built,—an improvement which the undergraduates will especially appreciate as soon as its doors are thrown open for physical exercise.

The beginning of the session of 1897–98 has been saddened by the death of one of the earliest and most devoted members of the Board of Trustees, Dr. James Carey Thomas. His manifold services to the community have been commemorated in many ways; his special relations to the University are indicated in a minute of affection and respect (appended to this report), which was adopted in an
assembly of the Trustees, the Faculty, and students on the Sunday after his death.

Another affliction came in the summer vacation. Dr. James E. Humphrey, associate professor of Botany, and Dr. Frederick S. Conant, a student of unusual promise who held the Bruce Fellowship, became the victims of tropical fever, contracted while they were engaged in scientific investigations, as members of the Marine Laboratory, on the Island of Jamaica. They were, both of them, naturalists of great ability and devotion, and their social and moral qualities endeared them to all their associates and colleagues. In the report of Dr. Brooks (appended to this report), and in a recent number of the University Circulars, fuller reference is made to these sad events.

The death of Professor Sylvester, Professor of Mathematics among us from 1876 to 1883, which occurred in London on the fifteenth day of March, 1897, was commemorated by an assembly of his former colleagues, pupils, and friends on the second day of May. The address delivered on this occasion by Professor Fabian Franklin has been printed and widely circulated. It is well known that, during the early years of this University, Professor Sylvester was a most valuable member of the Faculty, and that his experience, enthusiasm, knowledge, versatility and genius made a strong impression upon all who came within the circle of his influence. No small part of the early renown of the Johns Hopkins University is due to the lustre of his name.

The academic staff numbered during the year one hundred and nine teachers, including thirty-five professors and instructors in the Johns Hopkins Medical School. The
number of students enrolled was five hundred and twenty, of whom two hundred and fifty-four were residents of Maryland, two hundred and sixty-six came here from thirty-three other States of the Union, and sixteen from foreign countries. Among the students were three hundred and forty-four already graduated,—two hundred and ten in the Department of Philosophy and the Arts, one hundred and thirty-four in the Medical Department,—coming from one hundred and thirty-seven colleges and universities; there were one hundred and forty-four matriculates (or candidates for the degree of Bachelor of Arts); and there were thirty-two admitted as special students, to pursue courses of study for which they seemed fitted, without reference to graduation. The degree of Bachelor of Arts was conferred upon thirty-six candidates, the degree of Doctor of Medicine upon fifteen, and forty-two were promoted to the degree of Doctor of Philosophy.*

The following table indicates the enrolment of students in each year since the University was opened in the autumn of 1876:—

*The statistics have been prepared, as in former years, by the Registrar, Mr. T. R. Ball.
## Statistics.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Enrolled</th>
<th>Graduates, (incl. Fellows.)</th>
<th>Matriculates</th>
<th>Non-Matriculates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876-77</td>
<td>89</td>
<td>54</td>
<td>12</td>
<td>23</td>
</tr>
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<td>1877-78</td>
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<td>58</td>
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<td>22</td>
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<tr>
<td>1878-79</td>
<td>123</td>
<td>63</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>1879-80</td>
<td>159</td>
<td>79</td>
<td>32</td>
<td>48</td>
</tr>
<tr>
<td>1880-81</td>
<td>176</td>
<td>102</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>1881-82</td>
<td>175</td>
<td>99</td>
<td>47</td>
<td>31</td>
</tr>
<tr>
<td>1882-83</td>
<td>204</td>
<td>125</td>
<td>49</td>
<td>30</td>
</tr>
<tr>
<td>1883-84</td>
<td>249</td>
<td>150</td>
<td>53</td>
<td>37</td>
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<tr>
<td>1884-85</td>
<td>220</td>
<td>174</td>
<td>60</td>
<td>47</td>
</tr>
<tr>
<td>1885-86</td>
<td>314</td>
<td>184</td>
<td>96</td>
<td>34</td>
</tr>
<tr>
<td>1886-87</td>
<td>378</td>
<td>228</td>
<td>108</td>
<td>42</td>
</tr>
<tr>
<td>1887-88</td>
<td>420</td>
<td>231</td>
<td>127</td>
<td>62</td>
</tr>
<tr>
<td>1888-89</td>
<td>304</td>
<td>216</td>
<td>129</td>
<td>49</td>
</tr>
<tr>
<td>1889-90</td>
<td>404</td>
<td>229</td>
<td>130</td>
<td>45</td>
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<tr>
<td>1890-91</td>
<td>468</td>
<td>276</td>
<td>141</td>
<td>51</td>
</tr>
<tr>
<td>1891-92</td>
<td>517</td>
<td>337</td>
<td>140</td>
<td>70</td>
</tr>
<tr>
<td>1892-93</td>
<td>551</td>
<td>347</td>
<td>133</td>
<td>71</td>
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<tr>
<td>1893-94</td>
<td>522</td>
<td>344</td>
<td>123</td>
<td>55</td>
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<tr>
<td>1894-95</td>
<td>599</td>
<td>412</td>
<td>126</td>
<td>51</td>
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<tr>
<td>1895-96</td>
<td>590</td>
<td>406</td>
<td>149</td>
<td>41</td>
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<tr>
<td>1896-97</td>
<td>520</td>
<td>344</td>
<td>144</td>
<td>32</td>
</tr>
</tbody>
</table>

During twenty-one years, three thousand one hundred and forty-six individuals have been enrolled as students, of whom twelve hundred and ninety-nine are registered as from Maryland (including ten hundred and fifty-four from Baltimore), and eighteen hundred and forty-seven from sixty-two other States and countries. Nineteen hundred and nineteen persons entered as graduate students, and twelve hundred and twenty-seven entered as undergraduates. Of the undergraduates, two hundred and ninety-three have continued as graduate students, many of them
Statistics.

proceeding to the degree of Doctor of Philosophy. It thus appears that two thousand one hundred and three persons have followed graduate studies here.

The following table indicates the geographical distribution of the students each year since the opening, as shown by the Annual Registers:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1876-77</td>
<td>59</td>
<td>30</td>
<td>1887-88</td>
<td>199</td>
</tr>
<tr>
<td>1877-78</td>
<td>71</td>
<td>33</td>
<td>1888-89</td>
<td>183</td>
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<td>1878-79</td>
<td>76</td>
<td>47</td>
<td>1889-90</td>
<td>215</td>
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<td>1879-80</td>
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<td>1890-91</td>
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<td>1880-81</td>
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<td>81</td>
<td>1891-92</td>
<td>273</td>
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<tr>
<td>1881-82</td>
<td>97</td>
<td>78</td>
<td>1892-93</td>
<td>266</td>
</tr>
<tr>
<td>1882-83</td>
<td>106</td>
<td>98</td>
<td>1893-94</td>
<td>260</td>
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<td>1883-84</td>
<td>123</td>
<td>126</td>
<td>1894-95</td>
<td>260</td>
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<td>1884-85</td>
<td>130</td>
<td>160</td>
<td>1895-96</td>
<td>272</td>
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<td>1885-86</td>
<td>130</td>
<td>184</td>
<td>1896-97</td>
<td>254</td>
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<tr>
<td>1886-87</td>
<td>162</td>
<td>216</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The attendance upon the courses given in some of the principal subjects has been as follows during the last five years:

<table>
<thead>
<tr>
<th>Subject</th>
<th>1892-93</th>
<th>1893-94</th>
<th>1894-95</th>
<th>1895-96</th>
<th>1896-97</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics and Astronomy</td>
<td>118</td>
<td>115</td>
<td>132</td>
<td>12</td>
<td>78</td>
</tr>
<tr>
<td>Physics</td>
<td>145</td>
<td>123</td>
<td>156</td>
<td>132</td>
<td>115</td>
</tr>
<tr>
<td>Chemistry</td>
<td>127</td>
<td>119</td>
<td>130</td>
<td>123</td>
<td>117</td>
</tr>
<tr>
<td>Mineralogy and Geology</td>
<td>28</td>
<td>32</td>
<td>26</td>
<td>37</td>
<td>24</td>
</tr>
<tr>
<td>Biology</td>
<td>58</td>
<td>60</td>
<td>65</td>
<td>92</td>
<td>141</td>
</tr>
<tr>
<td>Pathology and Bacteriology</td>
<td>57</td>
<td>35</td>
<td>66</td>
<td>49</td>
<td>38</td>
</tr>
<tr>
<td>Greek</td>
<td>49</td>
<td>45</td>
<td>49</td>
<td>56</td>
<td>42</td>
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<tr>
<td>Latin</td>
<td>77</td>
<td>67</td>
<td>68</td>
<td>84</td>
<td>76</td>
</tr>
<tr>
<td>Sanskrit, etc.</td>
<td>41</td>
<td>46</td>
<td>60</td>
<td>46</td>
<td>34</td>
</tr>
<tr>
<td>Semitic Languages</td>
<td>18</td>
<td>18</td>
<td>24</td>
<td>18</td>
<td>28</td>
</tr>
<tr>
<td>German</td>
<td>110</td>
<td>103</td>
<td>152</td>
<td>167</td>
<td>139</td>
</tr>
<tr>
<td>French, Italian, etc.</td>
<td>80</td>
<td>83</td>
<td>83</td>
<td>92</td>
<td>109</td>
</tr>
<tr>
<td>English, etc.</td>
<td>84</td>
<td>85</td>
<td>149</td>
<td>148</td>
<td>122</td>
</tr>
<tr>
<td>History and Political Science</td>
<td>192</td>
<td>154</td>
<td>107</td>
<td>104</td>
<td>116</td>
</tr>
<tr>
<td>Philosophy</td>
<td>58</td>
<td>63</td>
<td>51</td>
<td>49</td>
<td>44</td>
</tr>
</tbody>
</table>
Since degrees were first conferred, in 1878, five hundred and thirty-two persons have attained the Baccalaureate degree, four hundred and thirty-six have been advanced to the degree of Doctor of Philosophy, and fifteen to the degree of Doctor of Medicine, as appears from the following table,—the whole number of individuals graduated being eight hundred and ninety-six:—

| 1877-78 | B. A. | 0 | Ph. D. | 4 | 1887-88 | B. A. | 34 | Ph. D. | 27 |
| 1878-79 | B. A. | 3 | Ph. D. | 6 | 1888-89 | B. A. | 36 | Ph. D. | 20 |
| 1879-80 | B. A. | 16 | Ph. D. | 5 | 1889-90 | B. A. | 37 | Ph. D. | 33 |
| 1880-81 | B. A. | 12 | Ph. D. | 9 | 1890-91 | B. A. | 50 | Ph. D. | 28 |
| 1881-82 | B. A. | 15 | Ph. D. | 9 | 1891-92 | B. A. | 41 | Ph. D. | 37 |
| 1882-83 | B. A. | 10 | Ph. D. | 6 | 1892-93 | B. A. | 40 | Ph. D. | 28 |
| 1883-84 | B. A. | 23 | Ph. D. | 15 | 1893-94 | B. A. | 41 | Ph. D. | 33 |
| 1884-85 | B. A. | 9 | Ph. D. | 13 | 1894-95 | B. A. | 37 | Ph. D. | 48 |
| 1885-86 | B. A. | 31 | Ph. D. | 17 | 1895-96 | B. A. | 37 | Ph. D. | 26 |
| 1886-87 | B. A. | 24 | Ph. D. | 20 | 1896-97 | B. A. | 36 | Ph. D. | 42 |

| 532 | 436 |

The following table indicates the enrolment of students in the Medical School since its opening in October, 1893:—

| 1893-94 | Candidates for the degree of M. D. | 18 | Doctors of Medicine | 65 | Total Enrolment | 83 |
| 1894-95 | M. D. | 51 | - | 76 | - | 127 |
| 1895-96 | M. D. | 84 | - | 69 | - | 153 |
| 1896-97 | M. D. | 123 | - | 11* | - | 134 |

The following promotions and appointments have been made during the year, the tenure of office being fixed, in each case, by the action of the Trustees:

*The special courses offered to Doctors of Medicine did not begin till May, 1897, and those in attendance will be counted in the enrolment of 1897-8.
Recent Appointments.

In the Philosophical Department:

To be Collegiate Professor of Mathematics:
Lorrain S. Hulburt, Ph. D.

To be Associate Professors:
James E. Humphrey, S. D., Botany.
C. W. Emil Miller, Ph. D., Greek.

To be Associates:
William J. A. Bliss, Ph. D., Physics.
C. Carroll Marden, Ph. D., Romance Languages.

To be Instructors and Assistants:
Edward C. Armstrong, Ph. D., Romance Languages.
N. Ernest Dorsky, Ph. D., Physics.
Oliver L. Fassio, S. B., Climatology.
George Lefevre, Ph. D., Zoology.
William T. Mather, Ph. D., Physics.
Philip Ogden, Ph. D., Romance Languages.
George B. Shattuck, Ph. D., Geology.

In the Johns Hopkins Medical School:

To be Associate Professor of Surgery:
John M. T. Finney, M. D.

To be Associates:
Joseph C. Bloodgood, M. D., Surgery.
Thomas S. Cullen, M. B., Gynecology.
Thomas B. Futchek, M. B., Medicine.
Ross G. Harrison, Ph. D., Anatomy.

To be Instructors and Assistants:
Charles R. Bardeen, M. D., Anatomy.
Harvey W. Cushing, M. D., Surgery.
Norman Macl. Harris, M. B., Pathology.
H. Barton Jacobs, M. D., Medicine.
Jesse W. Lazea, M. D., Clinical Microscopy.
Stewart L. Paton, M. D., Diseases of the Nervous System.
Jacob L. Walz, Pharmacy.
Gifts.

Among the special gifts of the year public acknowledgments are due for these:

Mr. J. B. N. Wyatt has founded, by a gift of five thousand dollars, a lectureship to be devoted to German History, Literature and Art, and to bear the name of his deceased friend, a native of Germany, long resident in Baltimore, Mr. W. H. Wehrhane. Correspondence is in progress respecting the delivery of the first course of lectures.

Friends of the University, whose names may not now be publicly mentioned, have given the sum of five thousand dollars, the income of which is set apart for the increase of the Library.

Mr. Leopold Strouse has continued his gifts for the purchase of books pertaining to the Semitic languages, especially Rabbinical Literature, and he has expressed his intention to do the same in future years. The purchase of the Dillman Library by Mr. G. W. Gail, the gifts of Mr. Strouse, and those of Judge Sulzberger and others, are important aids to the study of the Sacred Scriptures carried on by Professor Haupt and the scholars who are under his guidance in the Oriental Seminary.

Mrs. Morison, the widow of Dr. Robert B. Morison, lately a member of the Hospital Staff, as Dermatologist, has presented to the Medical School his professional books and some valuable instruments,—all welcome additions to our collections.

Baron Pierre de Coubertin, of Paris, well known as a promoter of friendly relations between the educated young men of France and the United States, has generously offered to give, annually, a Tocqueville prize medal (so
named in honor of the author of "Democracy in America") to that student who shall submit, under certain prescribed regulations, the best essay on some subject in historical or political science taken from French history or politics between the years 1815 and 1890.

The pupils of Professor Gildersleeve, on the twenty-second of February, through a committee consisting of Dr. E. H. Spieker, Dr. K. F. Smith, and Dr. C. W. E. Miller, presented his portrait, painted by Mr. Louis C. C. Krieger; and the colleagues and friends of Professor Newcomb have caused his likeness to be painted by Mr. Robert G. Hardie. At the request of the Trustees, Mr. Thomas C. Corner has painted a portrait of Mrs. Caroline Donovan, who gave to the University, at the instance of Hon. Ferdinand C. Latrobe, a professorship of English Literature.

The growth of the Medical School has been most satisfactory. Each succeeding year witnesses an increase in the number of students who enter upon a four-years' course of study, after having graduated in the liberal arts. Not only do the numbers increase, but the candidates for admission are better prepared in their preliminary scientific studies—Chemistry, Physics and Biology. In June last the first class was graduated. One of the number became at once an instructor in the Medical School; one was appointed a Fellow in Pathology, and the others were admitted to the Johns Hopkins Hospital as Internes. In presenting the candidates for the degree of Doctor of Medicine, the Dean of the School, Dr. W. H. Welch, delivered an important address. His first report, as Dean, printed in the appendix, shows the methods of the Medical School and the results of the training here
given during the four years that have passed since instruction began.

During the current year, the University has been represented at various international assemblies of scientific men: by Professor Haupt, at the International Congress of Orientalists in Paris; by Professors Clark and Reid, at the International Congress of Geologists in St. Petersburg; by Professor Thayer, at the International Medical Congress in Moscow; by Dr. Steiner, at the International Congress of Librarians in London; by Professor Remsen, at the British Association, meeting in Toronto; and by Professor Osler, at the meeting of the British Medical Association in Montreal.

The Turnbull lectures were delivered, March 25 to April 9, by the distinguished French critic and writer, Monsieur Ferdinand Brunetière, of Paris, Professor in the École Normale, and editor of the *Revue des Deux Mondes*. The lectures were delivered, in French, to an assembly of several hundred persons, composed of the officers and students of this University, and of ladies and gentlemen from Baltimore and Washington. The cultivated audiences that listened to him were delighted by the matter and the manner of his discourse, and the authorities were glad that their distinguished guest was subsequently invited to appear before academic audiences in Cambridge, New Haven, New York, and Bryn Mawr. The success of this course, delivered in a foreign tongue, was so great that it is decided to invite a German scholar of great distinction to deliver a course of lectures on this foundation in German. The choice fell upon Professor Erich Schmidt, of the University of Berlin, who has consented to come here in 1899.
and deliver a course of lectures in German. Meanwhile, Professor Charles R. Lanman, of Harvard University, formerly an Associate of this University, will deliver the next course of Turnbull lectures, on the subject of the “Poetry of India.”

The first course of lectures given in commemoration of the late Professor George Huntington Williams was delivered in April by Sir Archibald Geikie, Director-General of the Geological Survey of Great Britain and Ireland. He chose for his theme “The Founders of Geology,” and the course included six lectures before a select audience of students and teachers of geology. He also gave a popular lecture in McCoy Hall on the “Last Volcanoes of Western Europe.” The lectures of this course have already been published. The visit of this distinguished leader in geological science brought to Baltimore many of the principal geologists of the United States. At the close of the lectures an excursion of four days was made, under the auspices of the Maryland Geological Survey, to the most interesting regions in the State. Fifty leading geologists took part in this scientific tour, which was favored in every possible way by the Governor of the State, Hon. Lloyd Lowndes, and the State Board of Public Works, and by the officers of the Baltimore and Ohio, Cumberland and Pennsylvania, and Western Maryland Railroads.

The course of lectures before the Young Men’s Christian Association, annually provided by the liberality of Mr. Eugene Levering, was given in March, 1897, by the Rev. Dr. Lyman Abbott, of New York. His subject was “The Christian in the Commonwealth.”
In accordance with previous usages, a number of lectures, planned for the instruction of students, were open to the public during the past winter.

Dr. W. Dörpfeld, first secretary of the Imperial German Archaeological Institute in Athens, gave two illustrated lectures in German on the Acropolis of Athens and on Troy. Professor E. H. Griffin gave six lectures on "Modern Philosophy," discussing representative systems of modern thought from the point of view of Ethics and the Philosophy of Religion. Joseph Jacobs, Esq., president of the British Folk-Lore Society, and editor of *Folk-Lore*, delivered two lectures on "English Style." A course of eight lectures on the history and present status of botanical science was delivered by Dr. J. E. Humphrey, lecturer on Botany. Three courses, addressed specially to students of historical and political science, were given daily during January and February: Professor James Schouler, of Boston University, gave twenty-five lectures on the "Law of Personal Property"; Dr. E. R. L. Gould gave six lectures on "Problems in Modern Municipal Life"; and Professor Woodrow Wilson gave twenty-five lectures on "Some Fundamental Notions of Government". Professor F. M. Warren, of Adelbert College, delivered nine lectures on the "Modern French Drama". An address on "Public Opinion in America" was delivered by Mr. Richard Watson Gilder, editor of the *Century Magazine*, before the members of the Phi Beta Kappa Society and their friends. A lecture on "Color Printing from Stone," with especial reference to the plates illustrating the ceramics belonging to the Walters collection, was given by Louis Prang, Esq., of Boston.
Commemoration Day, February 22, 1897, was marked by the usual celebration, in which all the officers and students participated. The principal address was delivered by the President of Princeton University, the Rev. F. L. Patton, D.D., LL.D. His theme was "The Place which the Theistic Theory Holds in Intellectual Inquiry," and he treated it with learning, acumen and logic, making a profound impression on his audience. The degree of Doctor of Philosophy was conferred upon two candidates. In the evening, the alumni of the University held their annual banquet, at which Dr. Albert Shaw, of New York, presided.

Commencement was celebrated in the Academy of Music on the 15th of June, 1897. Certificates of proficiency in electricity were conferred upon four persons; thirty-six candidates were admitted to the degree of Bachelor of Arts; forty candidates were advanced to the degree of Doctor of Philosophy; and, for the first time in the history of the University, fifteen who had previously attained to the Baccalaureate degree were promoted, after a four years' professional course, to the degree of Doctor of Medicine. The principal address was delivered by Professor Remsen, and the candidates were presented by Dean Welch and Dean Griffin. The graduates and their friends were received in the evening by the President and Faculty.

The John Marshall prize was bestowed for the sixth time. The recipient of this honor, which is one of the highest prizes conferred by this institution, was Professor J. Franklin Jameson, of Brown University, a graduate and formerly a teacher in this institution, and now editor of the American Historical Review. The distinction was a
recognition of his writings and of his editorial services in historical science, especially in connection with the Review just mentioned.

The prizes offered by a friend of the University to matriculated students for skill in public speaking were awarded in April, as follows: the first prize of thirty dollars to Joseph N. Ulman; the second prize of twenty dollars to J. Edgar Knipp.

The seventeenth session of the Marine Laboratory, organized and directed uninterruptedly by Professor W. K. Brooks, was held at Port Antonio on the Island of Jamaica. It was under the immediate leadership of Professor Humphrey, whose sad death and that of the Bruce Fellow, Dr. Conant, are referred to elsewhere in this report. The number of investigators was twelve. The scientific results of the expedition were satisfactory to the Director, whose report in the appendix gives additional information. The continuance of this Laboratory has had a most serviceable influence upon the training of naturalists, not a few of whom have risen to distinction as investigators and teachers. As a partial illustration of these results, Dr. Brooks has prepared a bibliography of the Adam T. Bruce Fellowship, which will soon be printed. It shows the admirable effect of the special provision for the education of young naturalists.

There are two important public services in which the University is able to cooperate with the State of Maryland,—the maintenance of the Weather Bureau and the carrying forward of the State Geological Survey. The work of both organizations has been prosecuted with the most
satisfactory results during the past year, under the oversight of Professor W. B. Clark.

The Maryland State Weather Service is under the joint auspices of the United States Weather Bureau, Maryland Agricultural College, and the University. After an experience of five years, some fundamental changes are now proposed, including the preparation of several new publications. The cooperation of several highly qualified specialists has been secured for these new and old undertakings, and their names are given in the special report hereunto appended. Professor Clark, in his report, has stated that it is found "desirable to transfer the accumulation of general meteorological data to the Climate and Crop Service of the Weather Bureau, which is much more fully equipped for the carrying on of that phase of the work, and to devote the money and energies of the Maryland State Weather Service to the study of special problems connected with the climatology of the State. It is possible, by cooperation with the State Geological Survey, the State Agricultural institutions, and the Department of Agriculture at Washington, to take up lines of research that will be of much value to the people of Maryland, and it is proposed in the immediate future to begin the following investigations:"

"First. A study of special meteorological conditions, e. g., the influence of the Chesapeake Bay and the Atlantic Ocean upon the temperature of the adjacent land areas."

"Second. A study of the agricultural soils of Maryland in relation to geology and climate."

"Third. A study of the hydrography of the State, especially as regards the relation of rainfall to discharge and to soil conditions."
"Fourth. A study of the forestry conditions of Maryland and the relation of forest growth to climate and geology.

"These and various other lines of work open up a field for investigation which has been but little undertaken hitherto."

The State Geological Survey was instituted in the spring of 1896. A preliminary survey of the State has been made, in which general information has been collected in regard to all the mines, pits and quarries, ascertained by a personal visit from some member of the Survey. A second line of investigations has included a study of the building and decorative stones of the State, and the collection of specimens which may be submitted to careful tests. Professor Merrill, of Washington, has directed this latter work. A third and most important service has been the conduct of a magnetic survey, stations having been established at every county town in Maryland, as well as at other points. This work has been under the direction of Dr. L. A. Bauer, of Cincinnati. A fourth line of work is due to the cooperation of the United States Geological Survey, which has resulted in the survey of several hundred square miles in Kent, Cecil and Allegany counties. The national survey will continue this work until the map of the State is completed. Fifth, detailed studies have been made of the geology of Allegany and Garrett counties, and, to a less extent, of Kent and Cecil counties, and service has also been rendered to the Attorney-General in his determination of the western boundary.

The results of all this activity are recorded in the first volume of the Reports, an octavo volume of several hundred pages, illustrated by maps and diagrams, and includ-
ing an outline of our present knowledge of the physical features of the State, a bibliography and cartography, and the first report upon the magnetic investigations.

The prosecution of this survey not only reflects great credit upon the Legislature, which authorized its organization, and on the Director who has had charge of the work, but it is an admirable illustration of what may be accomplished by the union of the forces of the State and of the University in studying the characteristics of this region. Thus the scientific, the educational, and the industrial interests of the State are all promoted. Important light is thrown upon the deposits of metals, coal, clays, building stones, and other products of Maryland.

During the past year Dr. Minton Warren, Professor of Latin, was granted a leave of absence in order that he might be the Director of the American School of Classical Studies in Rome. Professor Marquand, of Princeton, formerly a Fellow of this University, was associated in the work as Professor of Archaeology. Mr. Hoeing, who held a fellowship in Latin, was allowed to spend the year in Rome. Dr. Warren discharged the duties of his important station with great ability and success.

Especial attention is called to the report of the Librarian, who has charge also of the Johns Hopkins Press. The number of volumes now owned by the University exceeds 82,000. During the year, 1438 volumes, including many of great importance, have been given us.

The various journals hitherto published have appeared with their usual regularity. Their contents are of such a character that they are constantly quoted in the scientific journals of the world. Nine parts of the revised Hebrew
Reports of Instructors.

Text of the Old Testament, edited by Professor Haupt, are now ready, and an English version, corresponding with this revised text, is to be issued by a well-known firm of publishers in New York.

Full accounts of all the various departments of instruction are given as usual by the chief instructors, and reference must be made to these reports for a complete understanding of the educational influences that are here exerted.

Respectfully submitted,

Daniel C. Gilman,  
President.

Presented,  
December 1, 1897.
REPORTS ON THE INSTRUCTION IN THE
CHIEF BRANCHES OF STUDY.

Prepared by the Principal Instructors in the several departments.

Mathematics.

I.—Graduate Courses.

Professor Craig gave the following courses:

1. Partial Differential Equations of the Second Order. *Three times weekly, through the year.*

   A large part of this course was devoted to the study of Laplace's Equation, the methods of Neumann, Schwarz, and Poincaré for the solution of Dirichlet's Problem being very fully presented, as also the extension of the Theory to the Riemann's Surface. The general form of the Linear Equation was then studied, following the researches of Picard, Paraf, Bianchi, Dini, Burgati, and others, and this was followed by a fairly full account of Picard's Method of Successive Approximations and of Darboux's Development of Laplace's Method, the Theory of Invariants, etc.

2. Theory of Surfaces. *Three times weekly, through the year.*

   About half of this course was devoted to the Theory of Geodesic Lines and Geodesic Parallels. This subject was very fully treated, following in particular the methods developed by Darboux and Bianchi. The theory of Differential Parameters preceded an introduction to the Theory of the Deformation of Surfaces. This latter theory was only worked out fully for surfaces of revolution and surfaces of constant negative curvature. The theory of the transformation of these surfaces was also developed, and their connection with groups of Linear Substitutions dividing the upper half of the plane.

3. Conform Representation. *Weekly, for about two months.*

   It was necessary to use this method in parts of both of the preceding courses, so it became advisable to introduce a short course on the subject. This was based on chapters in Picard's Traité d'Analyse, Darboux's Théorie Générale des Surfaces, and Forsyth's Theory of Functions.
Courses of Instruction, 1896-97.

4. Discontinuous Groups of Linear Substitutions and Fuchsian Functions. *Twice weekly, for half a year.*

This course was based mainly on Poincaré’s three memoirs on Fuchsian Groups, Kleinian Groups, and Fuchsian Functions; on chapters from Forsyth’s Theory of Functions, and on Humbert’s memoir on Applications of Fuchsian Functions to Geometry.

Dr. Chessin gave the following courses:

This course had the character of an introduction to the Modern Theory of Functions. The theory of functions of a real variable was given at some length after the ideas of Weierstrass, Cantor, and others. In the theory of functions of a complex variable the course had in view mainly the general properties of analytic functions. The ideas of Cauchy, Riemann, and Weierstress were equally developed within the limits of an introductory course, which concluded with an exposition of the general properties of periodic functions.

2. Elliptic functions. *Once weekly, through the year.*

In this course of an elementary character the essential principles of the theory were given, together with some applications to Geometry, Physics and Mechanics. The course followed Appell and Lacour’s *Principes de la Théorie des Fonctions Elliptiques et Applications.*


After a rather thorough study of Kinematics, this course was devoted mainly to the discussion of the motion of rigid systems and solid bodies, to the general equations of Dynamics and to their integration.

Dr. Hulburt gave the following courses:

In this course the projective properties of figures in two and three dimensions were studied from a purely geometrical standpoint. Reye was the author followed, with frequent references to Steiner, Von Staudt, and Cremona.


In this course were studied the general theory of substitution groups and Galois’s theory of algebraic equations. The authors chiefly referred to were Netto, Serret, Jordan, and Bolza.

A few lectures were given at the close, introductory to Klein’s Theory of the Ikosahedron.

Dr. Cohen gave the following course:
Theory of Invariants. *Twice weekly, through the year.*

The greater part of the time was devoted to the study of the theory of invariants, covariants, etc., of binary and higher forms without the use of symbolic methods, including a study of the application of generating
functions to the determining of complete systems for binary quantics. The study of the German symbolic method was then taken up.

Treatises by Salmon, Faà de Bruno, Elliott, Clebsch, Gordan, and memoirs by Sylvester, Cayley, Franklin, and others were referred to.

Dr. E. O. Lovett gave the following course:
The Geometry of Lie’s Contact Transformations. Weekly, second half-year.

II.—UNDERGRADUATE COURSES IN MATHEMATICS.

These courses are the same from year to year. During the year 1896-97 they were given as follows:

For Candidates for Matriculation:

Solid Geometry. *Four times weekly, till Christmas.* Dr. Cohen.
Trigonometry. *Four times weekly, from January 4 to March 18.* Dr. Cohen.
Analytic Geometry. *Four times weekly, from March 22 to end of year.* Dr. Cohen.

First Year Course:

Analytic Geometry. *Four times weekly, till Christmas.* Dr. Cohen.
Differential and Integral Calculus. *Four times weekly, from January 4 to end of year.* Dr. Hulburt.

Second Year Course:

Differential and Integral Calculus (special topics) and Determinants. *Four times weekly, till Christmas.* Dr. Hulburt.
Theory of Equations. *Four times weekly, January 4 to February 12.* Dr. Cohen.
Modern Plane Analytic Geometry. *Four times weekly, February 16 to April 9.* Dr. Cohen.
Solid Analytic Geometry. *Four times weekly, April 22 to end of year.* Dr. Cohen.

Third Year Course (Elective):

Differential Equations. *Twice weekly, through the year.* Dr. Hulburt.

THOMAS CRAIG,
Professor of Pure Mathematics.
Courses of Instruction, 1896-97.

Astronomy.

During the year 1896-97 the following courses of instruction were given:

By Associate Professor C. L. Poor:
1. General Course in Theoretical and Practical Astronomy. *Twice weekly, through the year.*
   This course included a general outline of the principal problems of Spherical Astronomy, the first principles of the method of Least Squares, and a discussion of the fundamental laws and equations of Gravitational Astronomy.
   The methods of computing and correcting orbits were fully developed, and special attention was given to the practical application of the various formulas derived. The course was based upon Oppolzer's "Bahnbestimmung der Kometen und Planeten."
   The methods of computing the perturbations of the elements and of the rectangular coördinates were developed and the students trained in their applications.
   This was an elective course for undergraduate students.

The following investigations were carried on during the year:

By Dr. Poor:
   The design and construction of a new form of parabolic mirror for reflecting telescopes. New methods of grinding and polishing such mirrors were developed and experimental machines built. The experiments are full of promise.
   The correction of the orbit of Periodic Comet 1889 V=1896 C.

By Mr. F. H. Clutz:
   Determination of the Definitive Orbit of Asteroid 115 Thyra. This has been offered as a dissertation for the degree of Doctor of Philosophy.

By Mr. S. A. Mitchell:
   A catalogue of two hundred companion stars for Periodic Comet 1889 V=1896 C.
   Tests of various makes of plates and methods of photographing the moon. Some good negatives were obtained.

By Messrs. Wilhelm and Harry:
   A study of the Meridian Circle, owned by the University, to determine the limit of accuracy with which observations can be made therewith.
Up to May 1 the observatory was open for instruction on seventy-two nights. The transit instrument was used on thirty-two nights, the equatorial on fifty-five nights, and the meridian circle on thirty-nine nights. Fourteen students have had some practice with the instruments.

Chas. Lane Poor, Associate Professor of Astronomy.

Physics.

The Physical Laboratory has been open daily during the year for the work of advanced and undergraduate students. Regular courses of lectures have been given, meetings have been held for the reading of the current journals, and a Physical Seminary has met weekly throughout the year. The Seminary, to which only the most advanced students have been admitted, was conducted by Dr. Ames, and the basis of study for the year has been the consideration of some of the fundamental experiments and theories of Physics. A series of papers was presented by the members of the Seminary, a list of which appears below.

The regular courses of instruction were as follows:

By Professor Rowland:
1. Mathematical Physics, treating the subject of Electricity and Magnetism. Four times weekly, through the year.
2. Meetings for the discussion of the current Physical journals. Weekly, through the year.

By Associate Professor J. S. Ames:
1. Theoretical Mechanics. Twice weekly, first half-year.
2. Electrical Waves. Twice weekly, second half-year.
3. Advanced General Physics. Four times weekly, through the year.
4. General Physics (Minor Course). Four times weekly, through the year.
5. Meetings of the Physical Seminary. Weekly, through the year.

By Associate Professor Louis Duncan:
1. Applied Electricity (First Year). Twice weekly, through the year.
2. Applied Electricity (Second Year). Twice weekly, through the year.
3. Electrical Laboratory. Daily, through the year.

By Mr. H. S. Hering:
1. Electrical Measurements. Twice weekly, through the year.
2. Central Station Equipment. Four times weekly, second half-year.
3. Electrical Laboratory. Daily, through the year.
By Mr. H. G. Geer:
2. Steam and Hydraulic Engineering. *Three times weekly, through the year.*
3. Experimental Steam Engineering. *Weekly, through the year.*
4. Mechanical Drawing. *Two afternoons weekly, through the year.*

The following papers were presented in the Physical Seminary:
The Hall Effect, by E. Rhoads.
Electrical Waves, by J. S. Ames.
The Beginnings of Physical Science, by J. S. Ames.
Measurement of Surface Tension, by N. E. Dorsey.
Galvanometer Design, by C. W. Waldner.
Measurement of Temperature, by W. S. Day.
Electro-Chemical Measurements, by H. C. Jones.

These essays were designed to present in a clear and concise manner the fundamental experiments and theories of each subject.

In the Laboratory the following work has been done:
The Director of the Laboratory has been engaged in a series of researches on the subject of permanent magnets, and has devised new methods for causing them to preserve a permanent state. He has also elaborated certain new methods for the measurement of capacity and inductance, methods which have been tested under his direction by Mr. T. D. Penniman. In the course of this theoretical investigation, special attention has been given to the subject of Electrical Absorption in Condensers. Under the general guidance of the Director, the final reduction and publication of the tables of solar spectrum wave-lengths have been continued. The measurements of the photographic plates have been made by Mr. L. E. Jewell, and the wave-lengths have been published during the year in the Astrophysical Journal.

Measurements of the wave-lengths of certain elements have been made. In particular those of Lanthanum have been measured by Mr. C. N. Harrison.

Under the guidance of the Director and Sub-Director, the researches that follow have been carried on:
Measurements have been made of the shifting of the wave-lengths of various elements when the pressure of the arc is altered. This work is a continuation of that of last year, and has been extended to nearly all the known elements. Particular attention was paid to the shifting of the various series of lines in the spectrum of any one element, and the subject has been treated in a short paper published in the University
Circulars by Dr. Ames and Mr. Humphreys. The entire subject of the shifting of the wave-lengths under pressure formed the dissertation submitted by Mr. W. J. Humphreys for the degree of Doctor of Philosophy, and the complete results are being published now in the Astrophysical Journal. One of the most interesting results of Mr. Humphreys' investigation was to prove that the shifting is a periodic function of the atomic weights.

The question of the compound nature of Helium gas was investigated spectroscopically by Dr. Ames and Mr. Humphreys, and the results were published in the Astrophysical Journal.

A series of most important observations has been made by Mr. Jewell on the rates of rotation of different layers of the solar atmosphere at different latitudes, and also of the different pressure in these layers. These results are not ready for publication as yet. Mr. Jewell also made observations concerning the supposed presence of oxygen in the sun, the results of which have been published in the Astrophysical Journal.

A study of the effects of magnetization upon iron wires has been made by Mr. B. B. Brackett. This study includes changes in length, magnetization and Young's modulus, under various stretching weights, and has been offered by Mr. Brackett as a dissertation for the degree of Doctor of Philosophy. An abstract of this was published in the University Circulars for June.

Mr. N. E. Dorsey has completed his research on the surface tension of dilute aqueous solutions of various salts. He has offered this as his dissertation for the degree of Doctor of Philosophy, and an abstract has already appeared in the University Circulars. The complete paper is to appear within a few weeks in the Philosophical Magazine.

Mr. W. T. Mather has completed his research on the velocity of the ions in solutions of silver salts in water and alcohol, and the work has been accepted as a dissertation for the degree of Doctor of Philosophy. Mr. Mather has published an abstract of his work in the University Circulars, as well as a short note on the Volhard method for the analysis of silver salts.

During the year was made a most important series of comparisons of Rowland's mercury thermometers (which he had used in his investigation on the Mechanical Equivalent of Heat) with Griffiths' platinum thermometer and with three thermometers which have been compared with the standard gas thermometers of the International Bureau of Weights and Measures in Paris. The object of the comparison was to reduce all the measurements of the Mechanical Equivalent of Heat to the same thermometrical standards, and the conclusions which were reached are most important. In brief, it may be said that there is perfect agreement between the relative measurements of Rowland and Griffiths. The
absolute difference between them has been definitely proved to be due not to errors in experiment, but to some error in one of the electrical standards. These conclusions were recognized to be so important that Mr. Griffiths presented them at once before the Royal Society of London, the President of the Society, Lord Kelvin, having called the Society together for the special purpose of hearing Mr. Griffiths' statement. The comparisons with the platinum thermometer were made by Mr. C. W. Waidner and Mr. F. Mallory; those between Rowland's thermometers and the Paris ones were made by Mr. W. S. Day, and were offered by him as a dissertation for the degree of Doctor of Philosophy. Abstracts of these investigations have been published in the University Circulars, in the Philosophical Magazine, and in the Proceedings of the Royal Society.

The work begun by Dr. H. F. Reid on the Radiation of a "Black Body" has been continued by Mr. C. E. Mendenhall and Mr. F. A. Saunders. Their research is not yet completed, but some interesting preliminary observations have been published in the University Circulars.

An elaborate investigation has been begun by Mr. J. F. Merrill on the supposed Effect of the Surrounding Dielectric upon the Resistance of Metal Wires. This work is not quite complete, but it already points to the conclusion that no such effect exists.

The subject of Electrical Waves has been considered experimentally by Messrs. Newcomer and Mixter, but no new results of importance have been discovered.

It is interesting to note that all the abstracts which appeared in the University Circulars for June under the heading, "Notes from the Physical Laboratory," were immediately reprinted in the Philosophical Magazine, although they were not submitted to the editors for publication. Reports on almost all the above investigations were read by the various authors before the meetings of the American Association for the Advancement of Science, in Detroit, and before the British Association for the Advancement of Science, in Toronto, during August.

The following researches have been made under the direction of Dr. Duncan, Mr. Hering, and Mr. Geer:

The effect of armature reaction on synchronous motors.

Curves of armature currents of two-phase motors.

The effect of upper harmonics on the efficiency of transformers.

Apparatus was made for inserting upper harmonics in alternating current waves.

Chemistry.

The autographic recording of electromotive force and current by portable meters. Published in Electrical World, May 15, 1897.

Efficiency of Pelton wheel.

Study of steam consumed at the engine per lamp-hour, on lighting circuits.

The following reports of work have also been published by Mr. Geer:


Among the improvements in the Laboratory and its equipment may be mentioned the presentation of a series of portraits and autograph letters of various distinguished physicists, which have now been hung in the stairways of the Laboratory.

Owing to the courtesy of the Board of Trustees and the Provost of the Peabody Institute, the set of physical apparatus designed for lecture purposes, belonging to the Institute, has been deposited in the Laboratory for the use of the demonstrators in their classes in Physics.

During the year a Hydraulic bay has also been installed in the Power House, consisting of an 18-inch Pelton water wheel and a weir box with several different notches, hook, gauge, etc., for experiments on measurement of water-power.

During the year there have been enrolled twenty graduate students following Physics as their principal subject, and twelve graduate students candidates for the certificate in Electrical Engineering. In June, six of the advanced students received the degree of Doctor of Philosophy.

H. A. Rowland,
Professor of Physics.

Chemistry.

During the past academic year, the Chemical Laboratory has been open as usual for advanced and collegiate students. Lectures and classroom instruction have been given as indicated below:

By Professor Remsen:
1. The Fundamental Theories of Chemistry, advanced course for graduate students. Twice weekly, until the middle of January.
2. Chemistry of the Compounds of Carbon, advanced course for graduate students. Four or five times weekly, from the middle of January until the end of the year.
Courses of Instruction, 1896-97.

3. Meetings for Reports on the Current Journals of Chemistry. One and one-half hours weekly, through the year.

4. General Chemistry (Minor Course). Three times weekly, until Christmas.

By Professor Morse:
1. Analytical Methods, for graduate students. Once weekly, through the year.
2. Compounds of Carbon (Major Course). Four times weekly, second half-year.

By Professor Renouf:
1. Advanced Inorganic Chemistry (Major Course). Three times weekly, until Christmas.
2. General Chemistry (Minor Course). Four times weekly, from Christmas to the end of the year.

By Doctor Randall:
1. The Principles of Physical Chemistry, for graduate students. Twice weekly, until Christmas.
2. Reviews in General Chemistry (Minor Course). Once weekly, through the year.
3. Inorganic Chemistry (Major Course). Four times weekly, during part of the first half-year.

By Doctor Jones:
1. Special Topics in Physical Chemistry, for graduate students. Twice weekly, through the year.

By Doctor Gilpin:
1. Reviews in General Chemistry (Minor Course). Once weekly, first half-year.

During the year we had the pleasure of a visit from Professor Moissan, of Paris, whose brilliant work on Fluorine and the Metallic Carbides has attracted so much attention of late years. He gave us an extremely interesting lecture on the Carbides.

Instead of assigning topics to the advanced students for lectures to be given by them, another plan was followed, the result of which it is impossible to estimate satisfactorily at the present time. Each advanced student of a certain grade was given a chapter or two in Remsen's Inorganic Chemistry (Advanced Course) for special literary investigation, the object being to have each worker go to the sources and verify all the statements found in the chapters assigned to him, and to determine further whether advances have been made in the particular subject he was dealing with.

Five candidates presented themselves for the degree of Doctor of Philosophy. They are Messrs. G. Alleman, W. E. Henderson, R. S. Norris, C. D. Ragland, and W. B. Stoddard.
The titles of their theses are: A Further Investigation of Paradiazotoluene Sulphate and the Action of Sulphuric Acid on the Methyl Ether of Paracresol; A Further Investigation of the Symmetrical Chloride of $\rho$-Nitro-$\alpha$-sulpho-benzoic Acid; On $\rho$-Nitro-$\alpha$-Tolylphenylsulphone and Some of its Derivatives; Some Double Halides of Cadmium with Methylamines and Tetramethylammonium; A Further Study of the Products Formed by the Action of Heat on Parasulphaminebenzoic Acid.

These will be printed in separate form as theses, and the more important parts will be published in the American Chemical Journal during the year.

There have been enrolled thirty-eight graduate students, following Chemistry as their principal subject.

Seven numbers of Volume 18 and eight numbers of Volume 19 of the American Chemical Journal have been issued. The supply of material for the Journal is constantly increasing, and it seems probable that it will soon be necessary to enlarge it.

Ira Remsen,
Professor of Chemistry.

Geology.

During the past academic year the Geological Laboratory has been open daily for graduate and undergraduate students. The quarters have been enlarged by the addition of several rooms in the front building on Howard Street to give increased accommodation to the State Geological Survey work carried on under the auspices of the Geological Department.

The instruction in Geology has been strengthened by the appointment of Mr. O. L. Fassig as instructor in Climatology and Dr. George B. Shattuck as assistant in Geology.

The George Huntington Williams Memorial lectureship upon The Principles of Geology, established by the generosity of Mrs. Williams, was inaugurated with an important course of lectures upon The Founders of Geology; by Sir Archibald Geikie, Director-General of the Geological Survey of Great Britain and Ireland. The lectures began April 21 and closed April 28, a popular lecture upon The Last Volcanoes of Western Europe being given the evening of the last day. At the close of the lectures an excursion of four days was given under the auspices of the Maryland Geological Survey in honor of Sir Archibald Geikie. Fifty American geologists accepted the invitation to be present, and had an opportunity of seeing the leading features of Mary-
Courses of Instruction, 1896-97.

land geology. The State officers and the presidents of the railroads extended many courtesies to the visiting geologists.

Mr. Bailey Willis, of the U. S. Geological Survey, lecturer upon Stratigraphic and Structural Geology, gave an important course of lectures upon that subject.

During the past year the following courses of instruction were given:

(a) General Geology, by Professor Clark, Associate Professor Reid, and Dr. Mathews. *Four lectures and one afternoon of practical work, throughout most of the year.*

(b) Paleontology, by Professor Clark. *Two lectures each week, from December to May.*

(c) Petrography, by Dr. Mathews. *Three lectures each week, throughout the year.*

(d) Statigraphic and Structural Geology, by Mr. Willis. *Two lectures each week, from February 15 to May 1.*

(e) Founders of Geology, by Sir Archibald Geikie. *Six lectures in April.*

(f) Last Volcanoes of Western Europe, by Sir Archibald Geikie. *One lecture in April.*

(g) Geological Conferences. *Fortnightly, from November 15 to April 1.*

(h) Student Lectures. *Fortnightly, from November 15 to April 1.*

Original Work and Publications.

Geological studies were pursued by Professor Clark upon the Coastal Plain Formations of the Middle Atlantic Slope, with the co-operation of Dr. R. M. Bagg, Dr. George B. Shattuck, Mr. A. Bibbins, and Mr. Cleveland Abbe, Jr. Several reports and papers upon various phases of this work were prepared during the year and published in scientific journals. Professor Clark was also actively employed in the management of the State Geological Survey, and in preparing the first volume of its reports.

Associate Professor Reid, as the member for the United States of the International Committee on Glaciers, has been collecting information regarding the variations of American glaciers. He has also been making investigations of the movement and stratification of glaciers. This work was carried on last Summer in Switzerland, and is to be continued this year.

Dr. Mathews took up for investigation the crystalline rocks of the northern tier of counties in Maryland, although much of his time was occupied in the preparation of an exhaustive geological bibliography and cartography of the State for the State Geological Survey.

Two candidates presented themselves in June for the degree of Doctor of Philosophy. The first, Mr. George B. Shattuck, took up for investi-
Geology.

The paleontology of the Shoal Creek beds of Texas, and the second, Mr. Francis P. King, engaged in a study of the corundum-bearing basic plutonic rocks of Georgia. The results of these investigations were submitted as theses.

Several other lines of work were undertaken by different members of the department and have already resulted in brief communications.

Excursions.

Numerous short excursions were made during the Autumn months into the surrounding country, both in the Coastal Plain and the Piedmont Plateau, under the guidance of Professor Clark and Dr. Mathews. Two longer student excursions were made in May—the first for a study of the tertiary formations along the banks of the York and James Rivers, Virginia, and the second for a study of the crystalline rocks of central and western Maryland.

The advanced students in geology also took part in the larger excursions given by the Maryland Geological Survey in honor of Sir Archibald Geikie.

Scientific Societies.

The fortnightly meetings of the Geological Society of Washington were attended during the Winter by the instructors and students of the department, all of whom had been elected as non-resident members. As the results of many of the most noteworthy investigations of the year were presented at these gatherings, great benefit was derived by those in attendance.

Several members of the department also became members of the National Geographic Society, and availed themselves of its privileges.

Apparatus and Collections.

Several important additions were made to the apparatus and collections during the year, including the maps of foreign official surveys. Important collections of rocks and fossils were likewise acquired, representing the geology of this and other lands.

Wm. Bullock Clark,
Professor of Organic Geology.

The Biological Sciences.

During the past academic year the biological laboratory has been open for advanced and collegiate students, and certain courses have been attended by students in the medical school. Lectures and class-room instruction have been given as follows:
Courses of Instruction, 1896-97.

By Professor Brooks:
1. Advanced Zoology. For graduate students. *Weekly, through the year.*
2. (With Dr. Andrews and Dr. Humphrey.) Meetings of graduate students for reports on the current literature of Zoology and Botany. *Weekly.*
3. Elementary Zoology. *Four times a week, October 5 to January 1.*
4. (With Dr. Andrews and Dr. Barton.) Elective course in Zoology. *Twice a week, through the year.*

By Professor Howell:
1. Physiology. *Three times a week, through the year,* for medical students and graduate students in biology.
2. Meetings of graduate students for reports on the current literature of Physiology. *Weekly, through the year.*

By Dr. Andrews:
1. General Biology. *Daily, to April 1.*
2. Elements of Embryology. *Three times a week, from April 1 to end of session.*
3. Comparative Embryology. *Daily, April 1 to end of session.*

By Dr. Dreyer:
1. Histology and Physiology. For undergraduates. *Four times weekly, from January 1 to April 1.*
2. Normal Histology. For medical graduates. *Three times weekly, from November 1 to January 1.*

By Dr. Humphrey:
Advanced Botany. For graduate students. *Twice a week, through the year.*

By Dr. Barton:
Analysis of Plants. *Twice weekly, from April 1 to end of session.*

Advanced Work in Zoology.

The following researches have been carried on in the Biological Laboratory and in the Marine Laboratory during the year: The embryology and anatomy of Lucifer; the embryology of the Cladocera; the structure, development, and systematic zoology of the Teredinidae; the embryology of Synapta; the habits, structure, and development of Yoldia; the systematic zoology, anatomy, and histology of the Cubomedusae; the habits of Insects; the blastomeres and follicle-cells of Salpa; budding in the Tunicata. Many of these researches are well advanced, and abstracts of them are now in press for publication in the University Circulars.
The Biological Sciences.

Volume iv of Memoirs from the Biological Laboratory, consisting of reprints of memoirs which have been published elsewhere, is now in press, and will be issued early in 1898.

The work of the Zoological Seminary, which met once a week throughout the year, consisted of reports on the progress of researches in the laboratory, and the following course of twenty-four lectures, by instructors, assistants, and advanced students, upon subjects which were assigned by the Professor of Zoology: C. P. Sigerfoos, six lectures on Lamellibranchs; F. S. Conant, four on the Meduse; G. A. Drew, three lectures and three demonstrations on Yoldia; H. L. Clark, five on Echinoderma; C. Grave, two on Aphidæ; W. K. Brooks, four on the work of Harvey, Gesner, and Aldrovandi.

The Adam T. Bruce Fellowship has been held by Dr. George Lefèvre, who has continued at Wood's Hall and in our laboratory his studies of budding in the Tunicata. An illustrated memoir based on these studies is now in press.

Fellowships were held by D. S. Johnson, who took charge of the library through the year, and H. L. Clark, who had charge of the museum.

Four candidates presented themselves for the degree of Doctor of Philosophy. They were C. P. Sigerfoos, whose thesis is "The Teredinidae;" F. S. Conant, whose thesis is "The Cubomedusae;" H. L. Clark, whose thesis is "Synapta vivipara;" and D. S. Johnson, whose principal subject is Botany, and his thesis "Marsilia."

A party of advanced students, under the direction of Dr. J. E. Humphrey, went in June to Port Antonio, Jamaica, where a building had been rented by the University as a laboratory, and equipped with books and apparatus for research in zoology and botany.

Advanced Work in Animal Physiology.

The following courses for graduate students have been given during the past academic year:

By Professor Howell:

1. A systematic course of lectures upon General and Special Physiology.

2. A Physiological Journal Club. Weekly meetings were held to report and discuss papers appearing in current journals of physiology.

3. A Physiological Seminary. Meetings were held once a week, through the year. The following books were read and discussed: Flechsig's Gehirn und Seele; Flechsig's Die Grenzen geistiger Gesundheit und Krankheit; Hill's Cerebral Circulation.
By Professor Howell and Dr. Dreyer:
1. Three laboratory courses in Elementary Physiology.
2. Special instruction in research.

The following papers have been published from the laboratory since the last report:

By Dr. Reid Hunt: "Experiments on the Relation of the Inhibitory to the Accelerator Nerves of the Heart" (Journal of Experimental Medicine, vol. ii).

By Professor Howell: "A Contribution to the Physiology of Sleep, based upon Plethysmographic Experiments" (Journal of Experimental Medicine, vol. ii).

The following investigations have been in progress during the year:
The relation of the nerve impulse to the amount of the external stimulus, by C. W. Greene; the effect of muscular fatigue upon the development of rigor mortis, by C. W. Latimer; a study of the central regeneration of the divided posterior roots of the spinal nerves, by Messrs. Baer, Dawson, and Marshall; the relation of temperature to the excitability of muscular tissue, by C. P. Emerson; the effect of nitrous oxide anaesthesia upon the gases of the blood, by Dr. G. T. Kemp; the internal secretion of the adrenal bodies, by Dr. G. P. Dreyer; the mechanics of the circulation in the brain, by Professor Howell; the internal secretion of the hypophysis cerebri, by Professor Howell.

**Advanced Work in Botany.**

A systematic course of lectures on the comparative morphology of plants was given twice weekly throughout the academic year by Dr. Humphrey. In connection with this, a laboratory course, requiring a minimum of six hours' work per week, was conducted.

The Botanical Seminary met twenty times during the year for the reading and discussion of Warming's "Lehrbuch der oekologischen Pflanzengeographie."

The instructors and students in Botany have contributed to the sessions of the Journal Club reports on current botanical literature.

A course of eight lectures on the history and present status of botanical science was given in December by Dr. Humphrey, before members of the University and citizens of Baltimore interested in the subject.

A fellowship was held during the year by Duncan S. Johnson, who continued researches previously begun, and received the degree of Doctor of Philosophy in June. His thesis is "On the Development of the Leaf and Sporocarp in Marsilia quadrifolia."

Researches have also been in progress on the embryology of some of the lower flowering plants.

It is much to be desired that it may soon be possible to accept the generous offer by Captain John Donnell Smith, of his exceptionally
valuable herbarium and botanical library as gifts to the University. Although, by his liberality, these are now accessible to accredited students, the provision of suitable accommodations for them at the University would be an addition to our resources of the first importance. The library contains many rare works and important journals not elsewhere to be found in Baltimore. The herbarium must always be of great value to the systematist, from the large number of rare plants and of type specimens which it contains; and the unusual abundance of the material and the excellence of its preservation offer opportunities for the study of many morphological and histological problems.

W. K. Brooks,
Professor of Zoology.

Greek.

Under the direction of Professor Gildersleeve the advanced students of Greek have been organized into a Greek Seminary. According to the plan of the Seminary, the work of each year is concentrated on some leading author or some special department of literature. During the past year the work has been in the Attic Orators.

In the Seminary proper, which met twice a week during the academic year, the orators chiefly studied were Antiphon, Lysias, Isocrates, Isaeus, Hyperides, and Demosthenes. Especial attention was paid to the development of language and style, and to the antique canons of aesthetic criticism. The members were required to present in turn exegetical and critical commentaries on select portions of the orators, to make analyses of speeches, and to prepare introductory lectures and papers on special points. Of the investigations and studies carried on in this field and elsewhere may be noted:

Comparison of Lysias i and Antiphon i; Genuineness of Andocides iv; the Proemia of Isaeus and Demosthenes; Law of Inheritance in Isaeus; Structural Analysis of Demosthenes Ivii, with illustrations drawn from the practice of the other orators; Hyperides iv and v; Archinus, orator and reformer; Influence of Herodotus on Lucian; Genuineness of Xenophon's Cynegeticus; Diodorus' Account of the Peloponnesian War; Prepositions in Apollonius Rhodius.

The work of the Seminary was supplemented by the study, under the professor's guidance, of the rhetorical writings of Dionysius of Halicarnassus, and by courses of lectures on Greek Rhetoric and on the History of Attic Oratory.

Besides the Seminary course proper, Professor Gildersleeve conducted a series of twenty exercises in extemporaneous translation from Greek into English and English into Greek, and lectured once a week
Courses of Instruction, 1896-97.

during the session on the Syntax of the Hypotactic Sentence, and once a week after the first of January on Greek Lyric Poetry.

Dr. C. W. E. Miller conducted auxiliary courses in Demosthenes and Aristotle's Rhetoric.

Undergraduate courses were conducted as follows:

Associate Professor Spieker:
Aristophanes, *Frogs.* *Twice weekly, first half-year.*
Lysias, books vii, xii, xxiv. *Three times weekly, first half-year.*
Homer, *Odyssey,* i, ix, x; Euripides, *Alcestis.* *Three times weekly, second half-year.*

Prose Composition (two classes). *Weekly, through the year.*

Dr. Miller:

Prose Composition. *Weekly, through the year.*

Undergraduates read privately for examination the following books:
Aristophanes, *Clouds.* (4.)
Aeschylus, *Prometheus.* (3.)
Xenophon, *Hellenica,* book i. (8.)
Plato, *Apology.* (7.)

B. L. Gildersleeve,
Professor of Greek.

Latin.

Professor Warren has been in Rome since May, 1896, as Director of the American School of Classical Studies, established in 1895. In his absence from Baltimore these particulars will, probably, be of interest to the authorities of the University.

Twelve students have been in attendance, among them two from this University, and great interest and enthusiasm in the work have been shown. Courses on Ancient Art, on Palæography, and kindred topics have been given, and, from time to time, excursions made to different points of interest. Students have been given the privilege of attending courses of lectures offered by distinguished specialists in the various other schools of archaeology at Rome, and, through the courtesy of the Royal and Papal authorities, have had free access to the Vatican and other great collections. Papers have been prepared by different members of the School, and several have taken this opportunity to pursue lines of special investigation which may serve as the foundation of some future work.
During the absence of Professor Warren from this University, the Latin Seminary, under the direction of Associate Professor Kirby F. Smith, held two meetings a week, throughout the year, the centre of work being the Roman Epic, especially Vergil. Select portions of Vergil's Eclogues, Georgics, and Aeneid were interpreted by members of the Seminary, and papers were prepared by them on the following subjects: On Vergil as an Epic Poet, on the Aetna, on the Culex, on the Catalepton, on the relation of Lucan to Vergil, on Rutilius Namatianus, on Calpurnius and Nemesianus, and on Columella and the Georgics.

Throughout the year the Director gave weekly lectures on the Roman Epic Poets. He also lectured weekly on the Ancient Commentators to Vergil during the first half-year, and on the Roman Hexameter during the second half-year. During the first half-year he read selections from Macrobius, and during the second half-year selections from Lucan, with a class meeting once a week. A Journal Club met fortnightly throughout the year to report on the recent periodical literature in the field of Latin.

Undergraduate courses were conducted as follows:

Associate Professor Smith:
History of Roman Literature, with reading of selected passages. (For students of Group vii not taking Prose Composition.) Weekly, throughout the year.

Martial and Petronius. Twice weekly, second half-year.
Latin Prose Composition. Weekly, throughout the year.

Dr. H. L. Wilson:
Catullus and Tibullus. Three times weekly, first half-year.
Plautus, Captivi; Terence, Phormio. Three times weekly, second half-year.

Livy, xxi and xxii. Three times weekly, first half-year.
Horace, Select Odes, Satires, and Epistles. Three times weekly, second half-year.
Latin Prose Composition. Weekly, throughout the year.
Sallust, Cicero, and Prose Composition. Three times weekly, first half-year.

Ovid, Vergil, and Prose Composition. Three times weekly, second half-year.

Undergraduates read privately for examination the following books:
Cesar, Bellum Civile, book i. (34.)
Horace, Ars Poetica. (31.)
Selections from Phaedrus. (31.)
Selections from Propertius. (6.)
Plautus, Miles Gloriosus. (6.)

Kirby F. Smith,
Associate Professor of Latin.
Sanskrit and Comparative Philology.

The advanced students in Sanskrit are organized into a seminar which meets at present once a week for an hour and a half for the study of the Vedic language and literature. Each of the more important subdivisions of Vedic literature is taken up in turn: Rig-Veda, Atharva-Veda; Brāhmaṇas and Upaniṣads (cf. the President's Annual Report of the year 1895).

During the present year the Atharva-Veda furnished the theme for study. As is well known, this is the most prominent work in which the Hindus codified their private antiquities and popular customs; it is, therefore, not necessary, as is true of other ancient peoples, to reconstruct a picture of their private lives out of sporadic, incidental statements. The Hindus themselves have searched out and stated systematically the main body of the facts involved.

The study of the Atharva-Veda is peculiarly timely owing to numerous recent publications bearing upon the subject. The first two volumes (quarto) of Śāyana's commentary on the hymns of the Atharvan, covering the first ten books of the Veda, are now available in the excellent Bombay edition of the late Hindu scholar Shankar Pandurang Pandit. Professor Henry, of the Sorbonne, has translated books vii-xiii. During this session appeared Professor Bloomfield's elaborate translation, with commentary, of the most important parts of the Atharvan in a stout volume, forming volume xlii of the well-known series, "Sacred Books of the East," published by the Clarendon Press, at Oxford, under the editorship of Professor Max Müller. Not an inconsiderable part of the total work on this Veda has been done at this University, beginning with Bloomfield's edition of the Kāuḍikā-Sūtra; continuing with numerous contributions to the interpretation and literature of the Atharvan, by Bloomfield, Fay, Goodwin, Hatfield, and Magoun; and concluding for the present with the above-mentioned volume of translations. The Atharvan is in a peculiar sense the property of American scholars; the first notable work of the late Professor Whitney was his edition, in 1856, (with the late Professor von Roth) of the text of the Veda; his last (posthumous) work, which we hope to see before long, contains the critical apparatus and a translation of the same book.

The study of the Avesta, the Zoroastrian Bible, and its language (Avestan, or Zend) has for some years past formed an integral part of the work of this school. During the present year there was given an advanced course of selected readings from the principal books (Yasna, Vendidad, and Yasht). The language and text of the Avesta was made the basis of comparative discussions on the Indo-Iranian languages and antiquities.

An elementary course of Vedic study was carried on during the first half of the year by Mr. J. A. Ness, Fellow in Sanskrit. The object of
this course is to introduce into the Vedic dialect, and to mark out its relation to the classical Sanskrit. This is accomplished by the careful analysis of selected hymns of the Rig-Veda. The usual courses in classical Sanskrit were given, and call for no special comment.

The work in Comparative Philology was two-fold. First, a course of weekly lectures during the entire session on General Comparative Philology. It began with a sketch of the linguistic ethnology of the Indo-European peoples, dealing with their ethnical interrelations, their original home and common characteristics. Then came in brief survey sketches of India, the Vedas, Brahmanism, Buddhism; Iran, the Ache- menidan inscriptions, the Zoroastrian religion and literature; the Indo-European peoples on the boundary between Asia and Europe; and, finally, the European peoples. This was followed by a brief account of the history of linguistic science; the principles of the science of language, and the exposition and criticism of modern methods in scientific grammar.

Secondly, a series of lectures through the year in the Comparative Grammar of Greek, Latin, German, and Sanskrit, the special subject under treatment being the history of the consonants. The next session's work in Comparative Grammar will be devoted to the history of noun-formation.

During the coming session, for the first time in this University, there will be given a course introductory to the Lithuanian language and literature.

Maurice Bloomfield, 
Professor of Sanskrit and Comparative Philology.

Oriental Seminary.

In the Oriental Seminary, under the direction of Professor Haupt, seventeen courses were given, special attention being paid to Hebrew, Assyrian, and Comparative Semitic Grammar.

Nine hours weekly, through the year, were devoted to the study of the Old Testament. Professor Haupt gave a critical interpretation of the Messianic Psalms (Pss. 2, 16, 22, 40, 45, 69, 72, 87, 89, 110). He also conducted, weekly through the year, a course in Comparative Hebrew Grammar, discussing the structure of the Semitic verb. Dr. Johnston read with the Second Year's Class in Hebrew the unpointed text of the Books of Samuel in the Sacred Books of the Old Testament, published under the editorial direction of Professor Haupt, besides conducting weekly Exercises in Reading at Sight the Books of Ruth and Esther.
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Dr. Johnston also lectured one hour weekly, during the first term, on the History of Israel, with special reference to the cuneiform inscriptions bearing on the subject, and during the second term on the Literature of the Old Testament viewed in the light of modern research. The instruction in Elementary Hebrew was given by Professor Haupt, two hours weekly, through the year. Professor Haupt also conducted, weekly, through the year, a class in Hebrew Prose Composition, in which the students translating selected English sentences into Hebrew.

Mr. Rosenau had charge of the instruction in Post-Biblical Hebrew, the Mishnic tracts Pirgê Abôîh and Abodah Zarah serving as textbooks during the first and second half-years, respectively.

In Biblical Aramaic Professor Haupt gave a critical interpretation of the Book of Daniel, with special reference to the Aramaic portions.

Two hours weekly, through the year, were given to the study of Syriac, Dr. Johnston reading with the class selected extracts from the Syriac Chronicles of Gregory Bar Ebhráyä in Roediger's Chrestomathia Syriaca.

Professor Haupt met, one hour weekly, through the year, an advanced class in Ethiopic, interpreting the apocryphal Book of Baruch in Dillman's Chrestomathia Aethiopica.

In Arabic Professor Haupt interpreted selected extracts from the Arabic geographers, Qazwînî, Ibn Sa'id, Abûlîdâ, Edrisî, etc., and conducted also Exercises in Arabic Prose Composition, the students translating English sentences into classical Arabic. Dr. Johnston gave Elementary Instruction in Arabic, Socin's Grammar and Brünnow's Chrestomathy of Arabic Prose Writers serving as textbooks.

Three hours weekly, through the year, were given to the study of Assyriology. The Assyrian Seminary met weekly, through the year, for the study of the Sumero-Akkadian texts in Professor Haupt's Cuneiform Texts. An Elementary Course in Assyrian was conducted, two hours weekly through the year, by Dr. Johnston, who explained the Sumero-Assyrian Syllabaries in the first part of Professor Haupt's Cuneiform Texts during the first half-year, and selected Historical Inscriptions in Dr. Meissner's Assyro-Babylonian Chrestomathy during the second half-year.

At the beginning of the session two new parts of the polychrome edition of The Sacred Books of the Old Testament, prepared under the editorial direction of Professor Haupt, were issued by the Johns Hopkins Press, viz: The Book of Genesis, by the Rev. C. J. Ball, of London, and Daniel, by Professor Adolf Kamphausen, of the University of Bonn. Ezra-Nehemiah, by Professor Hermann Gute, of Leipzig; Ezekiel, by Professor C. H. Toy, of Harvard University; and Isaiah, by Canon T. K. Cheyne, are all in type, while Judges, by Professor G. F. Moore, of Andover, and Numbers, by Professor J. A. Paterson, of Edinburgh, are
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in press, so that three-fourths of the whole Old Testament will be completed before the end of next session. Of the new English Version of the Old Testament, edited by Professor Haupt, with the assistance of Dr. Horace Howard Furness, of Philadelphia, four parts are electrotyped and three of them will appear at the beginning of next session, viz: Isaiah, by Canon Cheyne; Judges, by Professor G. F. Moore; Psalms, by Professor J. Wellhausen, of the University of Göttingen (English translation by Dr. H. H. Furness). Ezekiel, by Professor Toy, is in press and will appear (together with the translation of Leviticus, by Canon S. R. Driver, of Oxford, which is already electrotyped) before the end of next session.

The third part of the third volume of the Contributions to Assyriology and Comparative Semitic Grammar (pp. 385-492), published with the cooperation of the Johns Hopkins University, and edited by Professor Haupt in conjunction with Professor Friedrich Delitzsch, of Breslau, appeared before the beginning of the second term. It contains papers by Dr. Ludwig Demuth and Dr. Ernst Ziemer, discussing one hundred Babylonian legal and administrative documents of the reigns of Cyrus and Cambyses, preceded by some introductory notes from the pen of Professor Delitzsch. The fourth part, which completes the third volume, is in progress, and will appear before the end of this year. It contains papers on Ancient Babylonian Laws, by Dr. Meissner, of Halle; The Building Inscriptions of Nebuchadnezzar, by the late Dr. McGee, of Toronto; The Arabic Dialect of Morocco, by Dr. Talcott Williams, of Philadelphia; The Cuneiform Signs for Fractions, by Dr. L. Kootz and M. Thureau Dangin, of Paris. The fourteenth quarto volume of the Assyriological Library, edited by Professor Haupt, in conjunction with Professor Delitzsch, and containing an elaborate work on the Rib-Addi tablets of Tel-el-Amarna, by Dr. L. Kootz, is in press.

The first part of Dr. Johnston's thesis on The Epistolary Literature of the Assyrians and Babylonians appeared in January, in volume xviii of the Journal of the American Oriental Society (pp. 125-175). The second part will be published in the succeeding volume.

The American Oriental Society held its annual meeting in the Donovan Room, McCoy Hall, April 22-24. The following papers were read by members of the Oriental Seminary: Professor Haupt,—The Pronunciation of Hebrew, Ptolemaic Psalms, Babylonisms in Ezekiel, The Amplificative Plural in Hebrew, The Unicorn in the Bible; Dr. Johnston,—On the Origin of the Cuneiform System of Writing, The Scapegoat with a Sumerian Parallel; Mr. Land, Fellow in Semitic,—Verba Involuntaria in Semitic; Mr. Grimm,—Euphemistic Liturgical Appendices in the Psalms; Mr. Rosenau,—Substitutes for the Tetragrammaton in the Rabbinical Writings; Mr. Guttmacher,—Hebraisms in the Authorized Version; Mr. Schanfarber,—Notes on Psalm xvi.
Before the University Philological Association Dr. Johnston read two papers, entitled A Review of Delitzsch's *Assyrisches Handwörterbuch* (printed in the January number of the American Journal of Philology, vol. xvii, pp. 485-491), and On a Passage of the Babylonian Nimrod Epic. Professor Haupt read three papers (on Ps. 22, 13-17; Ps. 118, 27; Ps. 87) before the Society of Biblical Literature and Exegesis, at its meeting in New York during the Christmas recess.

The library of the Oriental Seminary was enriched by a valuable collection of books for the study of Rabbinical Literature, presented to the University by Mr. Leopold Strouse, of Baltimore. The formal opening of the collection took place on May 3.

**Paul Haupt,**

*Professor of the Semitic Languages.*

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**German.**

The German Seminary, under the guidance of Professor Wood, met three times weekly, through the year. The subject for the first half-year was Goethe's *Faust*. In the study of the First Part, beginning with the "Urfäust" and Goethe's *Puppenspiele*, the questions of conception and composition of the drama were considered, in chronological order, from the point of view of Goethe's development. The first three acts of the Second Part were then interpreted, and Goethe's drafts of uncompleted and of altered scenes were considered, together with the other paraphernalia. During the second half-year, the *Parzival* of Wolfram von Eschenbach was studied. The third, fifth, sixth, and ninth books were read. Style, composition, and metre were the subjects chiefly considered, particular attention being given to those parts of the poem which Wolfram did not derive from his known French sources. The development of the Grail legend was also discussed.

The Germanic Society, which is composed of the Director of the Seminary and the Instructors and Graduate Students in German, met fortnightly, through the year, in an evening session. Besides reviews and reports, the following papers were read, some of them presenting completed investigations, and others giving preliminary results of studies still in progress: Past Participle and Preterite in German; The First Person Plural Imperative in German; A Note on the Hildebrandslied; The Manuscript, Orthography, and Dialect of the Hildebrandslied; Karl Verner and his Work in Philology; Literary Reminiscences in No. I of Goethe's Sonnet Cycle; Goethe's Sonnets; The Sources of Lessing's *Emilia Galotti*; Wieland's *Oberon* and the Greek Romance of *Achilles*.
German.

Tatius; Frederick the Great and Madame de Staël, on German Literature; Dowden's "Case Against Goethe," and his earlier Goethe Criticism.

Professor Wood gave a course in Gothic and the Elements of Comparative German Grammar, twice weekly. Braune's *Gotische Grammatik* was studied, after which parts of *Ufils* were interpreted, with Bernhardt's larger edition as a basis. Streitberg's *Ungermanische Grammatik* was read entire, and was accompanied by practical exercises designed to illustrate the principles of sound-change and word-formation for the several Teutonic languages.

A class in Old Norse (Icelandic) met twice weekly, through the year. Noreen's *Allisländische Grammatik* was studied, and Norse forms were compared in detail with the corresponding forms in Gothic, Old High German, and Anglo-Saxon. The following literature was then read: *Gunnlaugs saga; Laxdaelasaga* (one-half); extracts from *Sturlunga saga* and the Prose *Edda*; chapters from K. Maurer, *Bekehrung des norwegischen Stammes*.

A course in the Beginnings of Modern German Classicism was conducted by Professor Wood, twice weekly, during the first half-year. The period in German literature from 1750 to the date of Goethe's first publication (1773) was studied. Wieland's title to classicism was shown in the style of his poetical *Märchen*, and in the influence which their metrical form exercised upon Goethe. *Oberon* and *Die Geschichte der Abderiten* were read, the philosophy of Wieland's romances was compared with that of Klinger, and the relation of both to Rousseau was discussed. Lessing's epigrams and fables were studied, as representing the norm of his literary production, and the same elements of style were considered in *Emilia Galotti*. *Nathan der Weise, Laokoon* and *Wie die Allen den Tod gebildet* were read, together with the essay on the same subject by Herder. Herder's *Fragmente über die neuere deutsche Literatur* were studied, and the conditions were discussed, under which the transition to the period of pronounced classicism in German literature was made.

In the undergraduate major course, Professor Wood conducted a class, twice weekly, during the second half-year, in Goethe's Faust, the First Part of which was read. In the minor course A, he conducted weekly exercises in prose composition.

Two papers were read by Professor Wood before the University Philological Association, on *Custom and Myth in the Midsummer Night's Dream*, at the October meeting, and on *Goethe's Sonnets*, at the meeting in December. Abstracts of both papers have appeared in the University Circulars (June, 1897).

Dr. B. J. Vos, Associate in German, gave the following courses:

Old High German. *Twice weekly, first half-year; weekly, second half-year.*
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Braune's Grammatik was studied and selections from his Althochdeutsches Lesebuch were read, especial attention being paid to Tatian, Isidor, and the alliterative poetry.

Old Saxon. Weekly, second half-year.
After a study of the grammar (Galée), the Old Saxon portions of Heyne's Kleine Allniederdeutsche Denkmäler were read and discussed.

Middle High German. Twice weekly, first half-year.
Paul, Mittelhochdeutsche Grammatik, was studied as an introduction to the language, and Aventiure v-x of Kudrun (ed. Symons) were read.

Undergraduate courses:
In the major course, Lessing's Nathan der Weise was read. The classical period of German literature was studied in Scherer's History of German Literature, Vol. 2. As private readings, Goethe's Götz von Berlichingen, Lewes, Story of Goethe's Life, and Rolleston, Life of Lessing, were assigned.

In the minor course A the following works were read in class: Goethe, Hermann und Dorothea; Schiller, Maria Stuart; Chamisso, Peter Schlemihl. In the case of the first two works, considerable attention was paid to the study of metrical form. Lessing's Emilia Galotti was assigned as private reading.

Special courses:
Historical German. Twice weekly.
The class read Schoenfeld, German Historical Prose, and Gutzkow, Zopf und Schwert.

Dr. T. S. Baker gave a course of lectures, weekly, to graduate students, on Das Junge Deutschland. Especial attention was given to the history of political poetry and to the literature of party, from the Napoleonic wars to the revolution of 1848—from Arndt to Freiligrath. The work included private reading by the members of the class on subjects assigned.

Dr. Baker gave undergraduate and special courses, as follows:
German: Minor course, Class B. Four hours weekly.
Otis, Elementary German; Brandt, German Reader (55 pp.); Von Moser, Der Bibliothekar; Goethe, Egmont; E. S. Buchheim, Elementary German Prose Composition; Whitney, German Grammar.
Prose Composition: In the major course. Weekly.
C. A. Buchheim, Prose Composition, furnished the material for translations into German Wilmanns, Deutsche Schulgrammatik, 2. Teil, was studied.
Contemporary Literature in Rapid Readings: Elective course. Two hours weekly.
English.

Baumbach, *Der Schwiegersohn*; Von Ebner-Eschenbach, *Miterlebtes*
Sudermann, *Die Schmetterlingsschlacht*.

Scientific German. *Two hours weekly.*


Mr. C. W. Prettyman, Fellow in German, conducted a class, three hours weekly, in Elementary German. Thomas’ *Practical German Grammar* (First Part) was completed, with the exercises, after which four short German plays were read from the collection of E. S. Buchheim. Special stress was laid upon accurate learning of forms, translation of English into German, and pronunciation.

Dr. Julius Hofmann met an undergraduate class in German Conversation, and a class in Oral Exercises, for graduates, each weekly. In the former, topics of general interest, especially such as relate to travelling and to student life were discussed; in the latter, the subjects were chosen from German literature.

HENRY WOOD,
Professor of German.

English.

1. Advanced Courses:

The English Seminary, conducted by Professor Bright, met twice a week (four hours), through the year. Selected topics in Middle English Literature were studied, as follows: (1) Visions of Heaven and Hell: (a) *Vision of St. Paul*; (b) *Vision of Tundal*; (c) *St. Patrick’s Purgatory*; (d) *Vision of the Monk of Eynsham*; (e) *Vision of Thurkill*. (2) Voyages to the Happy Other-World: (a) *Voyage of St. Brendan*; (b) *Les Trois P’elerinages (de Guilleville)*; (c) an excursion into the sources of Bunyan’s *Pilgrim’s Progress*; (d) *The Land of Cockaigne*. (3) Adaptation of classical stories, as illustrated in *Sir Orfeo*. (4) Eastern Legends and Tales: (a) *Barlaam and Josaphat*; (b) *The Seven Sages of Rome, and Dolopathos*. (5) *The Tale of Melusine (The Romance of Parthenay)*. (6) *The Legend of Gregory* (and, incidentally, *Apollonius of Tyre*). (7) *The Gest Hystoriale of the Destruction of Troy*, and a review of the Troy Cycle in European Literature. (8) Thomas Chester’s authorship: (a) *Libeus Desconus*; (b) *Sir Launfal*; (c) *Octavian*. (9) The poet Huchowne and the works attributed to him: (a) *Sir Gawayne and the Green Knight*; (b) *Pearl*; (c) *Cleanness*; (d) *Patience*; (e) *Morte Arthur*; (f) *Pistel of Sweete Susan*.
Professor Bright gave a course of fifteen lectures on the elements of Phonetics, and lectured once a week, through the year, on Phonology and Inflection in English Grammar.

A class was conducted by Professor Bright in the critical study of the Middle English *Poema Morale* (first half-year), and of the Anglo-Saxon *Guthlac* (second half-year).

The members of the Seminary met as a Journal Club (fortnightly, two hours) for reports on current periodicals, reviewing of new books, and the reading and discussion of original papers.

Professor Wm. Hand Browne delivered a course of lectures (weekly, throughout the year) on the "classical" literature of the eighteenth century. The nature of a "classical" period was discussed, with exposition of the circumstances under which such a period can arise; the character which it assumed in England, its canons and ideals; the reactionary and antagonistic influences, and the rise and progress of naturalism, antiquarianism, and romanticism.

Professor Herbert E. Greene gave a course of lectures (weekly, October to April) on the history of Rhetoric, beginning with the first conscious attempts at the use of artistic prose among the Greek sophists and orators, and tracing the theory of rhetoric as taught in the Greek and Roman schools, and as transmitted with additions and modifications to our own time. The course also included a discussion of present methods of teaching Rhetoric.

2. College Courses.

The English major class met Professor Bright, twice a week, through the year, for the study of Anglo-Saxon, using as a text-book Bright's *Anglo-Saxon Reader*.

This class also met Professor Browne twice a week. One hour weekly was given to the study of the Scottish Poets from Barbour to Lyndsay, and one hour weekly to (1) the Elizabethan literature, and (2) the literature of the first half of the nineteenth century.

The English minor class was conducted by Professor Browne. The class studied Early and Middle English texts (two hours a week), using Morris and Skeat's *Specimens* as the text-book, and English literature (two hours a week), using the Morley-Tyler *Manual of English Literature*.

A class in Rhetoric and English Composition met Professor Greene three times weekly, throughout the year. Theory was imparted by means of text-book (A. S. Hill's *Principles of Rhetoric*), lectures, and discussions; practice was obtained by the writing of about forty short papers and of four formal essays. Of the short papers a few were read and criticised in the presence of the class from week to week; of the formal essays about two-thirds were read and criticised.
privately with the writers, and were returned to them for correction. Each member of the class made a careful study of the style of one prose author (usually of a nineteenth century author), and presented the results of his study in a series of short papers. The class work included a study of representative passages of description and narration.

A class in English Literature met Professor Greene three times weekly, throughout the year. This class made a general survey of English Literature from the beginning to the first quarter of the seventeenth century. A detailed study was made of the works of Chaucer, Spenser, and Shakspere. Of the writings of these poets a considerable amount was critically studied in the class-room; and much more was read by the members of the class in their private reading. Each member of the class prepared two essays. In addition to the regular class-room exercises, three readings from the poems of Chaucer and twelve lectures upon the dramas of Shakspere were given for the benefit of those members of the class who desired to attend them.

An elective course in English Literature from the last half of the seventeenth century through the first quarter of the nineteenth century—from Dryden to Wordsworth—was given by Professor Greene, twice weekly, throughout the year. In connection with the weekly lectures and discussions, the members of the class did a large amount of private reading. Each member of the class prepared and read before the class two essays.

A course of ten lessons in Elocution, given by Mr. John R. Scott, was prescribed for every member of the undergraduate class in Rhetoric; and further instruction was provided for all who desired it.

A first prize of thirty dollars and a second prize of twenty dollars were offered by a lady of Baltimore for the best addresses prepared and delivered in public by matriculated students.

3. Lectures on Literature.

The sixth course of lectures on the foundation of the Percy Turnbull Memorial Lectureship of Poetry was given by M. Ferdinand Brunetière, member of the French Academy and editor of the Revue des Deux Mondes. The subject of this course (delivered in French) was French Poetry, treated in nine lectures, as follows: 1. La Poésie épique du moyen age. 2. La Poésie courtoise. 3. La Poésie chevaleresque: Romans de la Table Ronde et Amadis. 4. De Ronsard à Malherbe. 5. La Poésie dramatique: Corneille, Racine, Molière. 6. De Voltaire à Chateaubriand. 7. La Poésie romantique. 8. Le combat du romantisme et du naturalisme dans la poésie du 19e siècle. 9. Le symbolisme et les tendances actuelles de la poésie.

James W. Bright,
Professor of English Philology.

William Hand Browne,
Professor of English Literature.

Herbert Eveleth Greene,
Collegiate Professor of English.
Courses of Instruction, 1896-97.

Romance Languages.

I. Graduate Courses:

Professor Elliott conducted advanced courses as follows:

Romance Seminary. Two hours a week, through the year.

The work centered here on the Fables of Marie de France, of which it is proposed eventually to issue a critical edition based on the original manuscripts. The object of the course has been to acquire a working knowledge of the fable literature of antiquity and the middle ages; to become acquainted with the characteristics of the Norman and Anglo-Norman dialects in which some of the more important manuscripts are written; to present the fundamental principles of text-criticism and text-constitution, for which five fables were examined. These were based on five English and eight French manuscripts. A clear view of the morphology and phonetics of the language was obtained as contrasted with those of the Isle-de-France. Professor Elliott directed the text-constitution and criticism in this work, while the comparative study of the selected fables was undertaken by the members of the Seminary, under the supervision of Dr. Keidel, and reports presented which embodied the chief results of the special investigations made by each student.


The object here was to give the student an introduction to the phonetics and morphology of Folk- and Low-Latin as the common basis for a scientific study of the modern Romance idioms. Meyer-Lübke's treatment of the subject in Gröber's Grundriss der Romanischen Philologie was taken as the starting-point for this work, in connection with which lectures were given, contrasting the popular forms with the historic development of the classical forms. The material in the Probi Appendix was classified and the popular forms worked out on the basis of Schuchardt's Vocalismus des Vulgärlateins, Budinsky's Ausbreitung der Lateinischen Sprache, D'Arbois de Jubainville's Déclinaison latine en Gaule, Bonnet's Le Latin de Grégoire de Tours, Wolfflin's Archiv für lateinische Lexicographie, and Seelmann's Aussprache des Latein were constantly used in connection with this course.

Romance Club. Weekly.

The object of this organization, to which all members of the Romance Language department belong, is to foster a common interest in everything that concerns the study of the Romance idioms. Reviews of important journal articles, papers on original investigations, discussions of literary and scientific subjects, reports of correspondence of a professional nature, represent the chief exercises that claim the attention of the club.
French Dialects. Weekly.
The Western dialects were especially considered; in addition to this, the Lorraine, Burgundian, and Champagne were treated. The method of work was, to a great extent, practical, and had in view a sufficient acquaintance with dialect forms to enable the student to discriminate Old French texts belonging to these different idioms. To this end the leading characteristics of the old and the modern dialects were presented in a few lectures; then, through the use of early and later texts, the student was required to recognize and name the dialect features as they occurred.

Dr. Keidel also gave the following course of lectures:
Carolingerian Epic. Weekly.
The development and spread of the Carolingian Epic was traced in its more general features both in France, the land of its origin, and in Italy and Spain, whither it early migrated and exerted a lasting and deep influence upon their respective national literatures. The plan followed was to point out the cardinal principles underlying the various phases through which this branch of epic literature passed, rather than to attempt an encyclopaedic account of the immense number of individual poems and prose romances which make up the material basis of this department of Medieval Literature.

Dr. Menger conducted the following courses:
Old French Philology. Three hours weekly.
This course consisted of lectures (two hours weekly) on Phonology and Morphology. One hour per week was given to general discussion by the instructor and students of points involved in the lectures, and to a critical examination of the first few pages of the Voyage de Charlemagne, in order to apply the laws of development of Popular Latin into French, previously treated of in the lectures.

In the preliminary lectures of this course a view of phonetics in general, of acoustics as applied to the study, and of the physiology of the organs of speech, was given. Then the works of scholars who have dealt with French sounds were described briefly, and characterized according as their authors dealt with the acoustic or organic side of phonetics, or with a combination of the two. French vowel and consonantal sounds were then examined and classified.

Italian Philology. Twice weekly.
For a study of Italian phonology Meyer-Lübke's Italienische Grammatik was used as a basis. Different sections of this work were assigned to the students; each one of the latter, after having prepared in writing a report of his section, and on all references to books and journals
which treated of the point involved, read the same before the class, the other students taking notes from his paper. One of the fruits of this portion of the class work has been the preparation of an improved scheme for the presentation of the vowel developments; in this scheme all of the changes peculiar to each given vowel are treated under that vowel; this method seems to be more adapted to the needs of the beginner than that followed in Meyer-Lübke's Grammar. On Italian morphology lectures were given by the instructor in charge. The material for these was drawn, for the most part, from Caix, Origini della lingua poetica italiana, and from articles by Gröber in the Zeitschrift für romanische philologie, and by Ascoli and D'Ovidio in the Archivio Glottologico Italiano. For practical application of what was learned in both reports and lectures, a page of the Novellino was studied critically in the course of the session.


This was the beginning of a course the object of which was to treat minutely all manifestations of Italian prose previous to Boccaccio. The first six lectures dealt with the entire literature existing on the subject of the authenticity of the prose chronicles of Matteo Spinello da Giovannazzo and of Ricordano Malespini. Six lectures were devoted to the life and works of Brunetto Latini, four to the literary activity of Bono Giamboni, and three to that of Albertano da Brescia. Other subjects treated were the Selle Savi, the Conti di Antichi Cavalieri, the Dodici Conti Morali, and the Tavola Ritonda.

Old Italian Readings. Weekly.

In this course the attempt was made to read a number of complete texts, or else representative selections from the same, for the purpose of becoming acquainted with the subject matter treated of by the early Italian prose writers. These readings were intended to supplement the lectures on the Origins of Italian Prose. The following works were read in class: Il Novellino, Il Libro dei Sette Savi, and the Conti di Antichi Cavalieri in full. In addition, selections from the following were read: The Chronicles of Matteo Spinelli and Ricordano Malespini; Lo Libro della Doltrina del Dire e del Tacere of Albertano da Brescia; Della Composizione del Mondo of Ristoro d'Arezzo; Fiore di Felosofi e di molti Savi, and the following works of Bono Giamboni: Volgarizzamento del Tesoro di Ser Brunello Latini; Volgarizzamento delle Storie di Paolo Orosio, Volgarizzamento dell'Arie della Guerra di Flavio Vegezio, Introduzione alle Virtù, Della Miseria dell'Uomo, Giardino di Consolazione.

Associate Professor Rambeau conducted the following course: Phonetics and French Pronunciation. Weekly, March-May.

Lectures upon the history of phonetics, its importance for the teacher of modern languages, the physiology of speech, the vocal and conso-
nental system of the French tongue (Parisian standard), French and English basis of articulation, etc. Practical exercises in connection with the study of phonetic texts illustrating three different styles (discours, poésie, comédie).

Dr. DeHaan conducted the following courses:

A series of lectures on the Life and Works of Cervantes. The author's biography was studied in the light of the latest researches, after which his works were taken up in historical succession, due attention being given to important points of bibliography and to the literary filiation of each work. Weekly.

A series of lectures on the Spanish Novel of the Nineteenth Century. After a rapid review of the foreign influence that caused the historical novels of the first half of the century, the importance and influence of Fernán Caballero were particularly emphasized, and the more recent development of the historical, the social, and the regional literature, gave occasion for a detailed study of the works of Alarcón, Valera, Galdós, Coloma, and Pereda, to each of whom several hours were devoted. Weekly.

A class in the reading of Appel's Provenzalische Chrismomathie. The pieces read were selected more with an eye to their difficulty than to their literary merit, though the best lyrical poems were also studied. To test the progress made, a few hours were given to reading at sight of the prose extracts in the collection. Weekly.

The reading of Old French. The oldest monuments were read from Bartsch-Horning's La Langue et la Littérature Françaises, after which the class studied G. Paris, Extraits de la Chanson de Roland; Koschwitz, Voyage de Charlemagne; Luchier, Aucassin et Nicolette; Warnke, Lais de Marie de France, and the extracts of works of the twelfth and thirteenth centuries given in Bartsch-Horning's Langue et Littérature Françaises. Twice weekly.

Dr. Marden conducted the following courses:

Spanish Seminary. Weekly.

The work of the seminary consisted of a linguistic study of the Poema de Fernan Gonzales. The basis for the work was a fac-simile copy of the original manuscript and fragments, together with the printed editions. Special subjects in connection with the phonology, morphology, syntax, and versification of the poem, were worked out by the various members of the seminary, who embodied the results of their investigations in weekly reports. In short, the students were taught to handle the material, to sift and weigh the evidence in regard to doubtful and variant readings, and to make a practical application of their knowledge by constructing a critical text for the first six hundred verses of the poem. It is intended eventually to issue a critical edition of this thirteenth century epic.
Old Spanish Philology.  *Weekly.*  
Baist’s article in Gröber’s *Grundriss der Romanischen Philologie,* Vol. I, was taken as a basis for a series of lectures on Phonology. A critical study of the texts contained in Keller’s *Altspanisches Lesebuch* enabled the class to make practical application of the laws deduced in the lectures.

The class read in full the *Poema del Cid* (3734 verses), and selections from the *Cantares del Arcipreste de Fila* (600 verses).

Mr. Hugo P. Thieme lectured on the Romantic and Parnassian schools of French poetry, with special stress upon the origins of both schools. A special study was made of Chateaubriand, Mme. de Staël, Lamartine, de Vigny, de Musset, Leconte de Lisle, Gautier, Banville, and their versification.

Professor F. M. Warren, of Adelbert College, gave twenty lectures, in the month of February, on French Lyric Poetry, and also nine lectures on the Modern French Drama.

II. Undergraduate Courses.

Associate Professor Rambeau conducted the following courses:  
French: Minor Course A.  *Four hours weekly.*  
1. Short outline of the History of French Literature (XVII-XIXth Centuries), and reading of Comtes, Novels, and Dramas.  
Mérimée, *Colomba,* ch. i-ii, xiv-xv, xix-xxi (ch. vii-xiii, xvi-xvii, contents); Paul Passy, *Le Français Parlé,* Poetry and Prose, No. 2; Molière, *Le Bourgeois Gentilhomme,* A. i, ii, v (A. iii, iv, contents and plot explained); Victor Hugo, *Hernani,* A. i, ii, Sc. 1-3, iv, Sc. 3-5 (A. ii, Sc. 4-A. v, contents and plot explained); Alphonse Daudet, *Contes* (selections); Fortier, *Histoire de la littérature Française,* Parts iii, iv, v (with numerous omissions; the principal tendencies and movements, the most important writers, and all the authors of works read by the students). Private reading: Alexandre Dumas, Père, *Le Château d’If,* *Le Trésor Caché* (episodes of *Le Comte de Monte Cristo*), and *Le Capitaine Pamphile* (episodes); George Sand, *François le Champi.*

2. Modern French Comedy.  

3. (In connection with 1 and 2.) Short lectures, frequently in French, upon various subjects of literature and related topics (cf. previous reports); exercises in *pronunciation* (Sound Tablets, and Passy); a few essential features of *versification,* elements of French *conversation;*
oral reports, in French, upon authors and passages of works read by the students.

4. *Syntax and Prose Composition.*

Bevier’s Grammar, Pt. iii (Syntax) and Logie’s Exercises, xxii-xxix; Kimball’s exercises based on *Colomba*, Nos. 1-20; a few short essays upon authors and subjects connected with the private reading and class work.

**French: Major Course. Four hours weekly.**

1. *Outline of the History of French Literature from the beginnings to the XIXth Century; especially the XVIth Century,* study of Classical Tragedy and Comedy.


3. (In connection with 1 and 2.) *Lectures,* mostly in French, upon various subjects of literature and related topics (cf. previous reports); exercises in *pronunciation* (Sound Tablets, and Passy); principal laws of *versification,* the Alexandrine verse, Classical and Romantic; *French conversation; oral reports,* in French, upon authors and works, or passages of works, read by the students.

4. *Study of Idioms and Prose Composition.*

Storm, *French Dialogues,* Ch. i-x; exercises on idioms and syntax, based upon these dialogues, Ch. i-x. Original essays with reference to subjects and authors read by the students (cf. 1 and 2).

**Italian: Minor Course. Four hours weekly.**


2. De Amicis, *Alberto, Fortezza, Un Gran Giorno, Camilla; Verga, Vita dei Campi,* Nos. 1, 6, 7; *Capuana, Homo,* No. 2; Serao, *All’erta, Sentinella,* No. 2; Maffei, *Merope; Alfieri, Oreste;* selections from Carducci, *Odi Barbare; Tasso, Gerusalemme liberata; Dante, Divina Commedia;* Fenini, *Letteratura italiana,* and Guarnerio, *Manuale di versificazione italiana.*

3. Exercises in *pronunciation;* elements of *conversation;* short *lectures* (in the second term, frequently in Italian) upon modern Italian history and other subjects connected with the class work (No. 2).
Courses of Instruction, 1896-97.

Dr. Marden conducted the following courses:
French: Minor Course B. Four hours weekly.
This course was intended for graduate students and those undergraduates who had matriculated in Greek. The aim of the course was to give the students a reading knowledge of modern French. The elements of grammar were studied (Whitney's *Brief French Grammar*), and the following works were read: Super, *French Reader*; Mérimée, *Colomba*; Dumas, *L' Évasion du Duc de Beaufort*; Daudet, *Le Siège de Berlin* and *La Mule du Pape*. Exercises in prose composition were continued throughout the first term, and sight reading formed an important part of the work of the second term.

French: Elementary Course. Three hours weekly.
This course is part of the work of the preliminary year and is intended as a preparation for the Minor Course A. The text books used were Grandgent, *Short French Grammar*, and *Exercises*; Super, *French Reader*; Theuriet, *Bigarreau*.

Dr. De Haan conducted the following courses:
Spanish: Minor. Four hours weekly.
The essentials of Spanish Grammar were learned from Knapp's Grammar, and during the first term numerous exercises were given for practice. Reading was begun in Mantilla's *Libro de Lectura*, No. 2, and all the prose extracts having been carefully studied, Isla's *Gil Blas* was read almost entire.

Spanish: Elective. Twice weekly.
After the essentials of the grammar had been mastered, the class read graded prose pieces from Mantilla's *Libro de Lectura*, No. 2. Bretón's *La Independencia*, and Palacio Valdés, *José*.

French: Elective. Twice weekly.
During the year the class read Lolli, *Pêcheurs d'Islande*; Theuriet, *Le Mariage de Gérard*, and selected short stories by Daudet, Coppée, Theuriet, About, and others.

A. M. Elliott,
Professor of the Romance Languages.

History, Politics, and Economics.

This co-operative Department of Historical and Political Science has continued under the direction of Professor Herbert B. Adams, aided by Associate Professors John M. Vincent and Sidney Sherwood, Associates Bernard C. Steiner, J. H. Hollander, and W. W. Willoughby, Instructors J. C. Ballagh and H. L. Moore, and Assistant Guy Carleton Lee. Professors Woodrow Wilson and James Schouler and Dr. E. R. L. Gould
have given courses of lectures, which were open to select audiences of persons especially interested.

The most noteworthy feature in the work of the department has been the increased concentration of energy upon regular class work, with individual study and research. University intension has been the spirit of the department within the walls. A marked development of interest has appeared in the study of Politics and Public Law under the charge of Dr. Willoughby. The withdrawal of Professor George H. Emmott from this University to become Dean of the Law Faculty in Liverpool College (Victoria University), made it necessary to provide for our graduate students other subordinate courses in place of Roman Law and Historical Jurisprudence, which Professor Emmott had so well represented for ten years, 1886-96. A strong current of academic interest has appeared in the lectures offered by Dr. Willoughby on the Federal State in Theory and Practice. It is recommended that this line of work be further developed and that Dr. Willoughby be encouraged to give annual courses in the History of Political Philosophy and in American Public Law, both State and Federal. It is highly important for the training of academic teachers in historical and political science that Constitutional Law and Political Theory should be represented in this University throughout the year, and that graduates be encouraged to study Comparative Politics in connection with History and Economics for the Doctor's degree.

Another feature of growing importance in our department work is the development of so-called “conferences,” or branch-seminaries, which are now grouped around the original Historical Seminary or the Historical and Political Science Association. During the past year, besides the regular Historical Seminary, which is devoted to the discussion and criticism of doctors' theses, reviews of new books and monographs, there have been the following special or individual seminars conducted by different leaders:

1. The Educational Conference, conducted by Professor Adams, in which reports have been made by students on contemporary educational problems and on recent contributions to educational literature. Dr. Adams gave a series of twenty historical lectures on the Early History of Education, as far as the Rise of Mediæval Universities.

2. An Historical Conference, conducted weekly, by Associate Professor Vincent, for the study of practical problems in historical research.

3. An Economic Conference, conducted by Associate Professor Sherwood, on alternate Friday evenings.

In these various conferences student interest has been more specialized than ever before. Better and more individual training has been attained. In future, all conferences or special seminaries will become contributors to the more general proceedings of the Historical and Political Science
Courses of Instruction, 1896-97.

Association, whose fortnightly records have been reported, during the past year, in the Johns Hopkins University Circulars for February and May, 1897.

During the year 1896-97, the environment of class rooms of history, politics, and economics has been made more attractive and truly educational by the addition of a considerable number of interesting portraits of distinguished economists, historians, and public men. Special pains have been taken to increase the gallery of American statesmen in the corridor most frequented by students of historical and political science. Besides a marble bust of Alexander Hamilton, there are now to be seen good portraits of other fathers of the American Republic. There are also portraits of the leading American historians. In the department library and lecture rooms there are groups of eminent educators in history, politics, and economics. Another feature of educational and artistic interest is the attempt to exhibit the architectural characteristics of some of the great universities: for example, Oxford, Cambridge, Glasgow, and Owens College (Manchester), with some of the historic institutions of the South, the University of Virginia, Washington and Lee University, William and Mary College.

A list of publications in History, Politics, and Economics by graduates and members of this University was published in the University Circulars for February, 1897. An elaborate bibliography of the work of the department, from its beginning to the present time, has been prepared and will probably be published in connection with the Studies in Historical and Political Science. Among the noteworthy publications of the past year are (1) The Historical Development of Modern Europe from 1815 to 1880 (New York, 1896) by Dr. Charles M. Andrews, of Bryn Mawr College, formerly Fellow in History at this University; (2) History of the Tobacco Industry in Virginia from 1860 to 1894, by Dr. B. W. Arnold, Jr. (Studies, January-February, 1897); (3) The Story of Human Progress (Leavenworth, 1896) by Dr. Frank W. Blackmar, Professor of History and Sociology in the University of Kansas, formerly Fellow in History at the Johns Hopkins; (4) Promises of Democracy, by Dr. Blackmar (Forum, June, 1896); (5) Democracy versus Aristocracy in Virginia, by Dr. J. R. Brackett (Sewanee Review, May, 1896); (6) Salisbury and the Venezuelan Question, by C. H. Brough (Home Magazine, February, 1897); (7) Agreement of 1817 Regarding Reduction of Naval Forces Upon the American Lakes, by J. M. Callahan (American Historical Association, Washington, 1896); (8) The Shifting of Taxes, by Prof. T. N. Carver, of Oberlin College (Yale Review, November, 1896); (9) Proportional Representation, by Prof. J. R. Commons (New York, 1896); (10) A Study of Slavery in New Jersey, by Dr. H. S. Cooley (Studies, September-October, 1896); (11) The Vatican Archives, by Dr. C. H. Haskins, Professor of Institutional History in the University of Wisconsin, formerly Instructor in History at the Johns
History, Politics, and Economics.

Hopkins; (12) The Local History of Know-nothingism, by Dr. George H. Haynes, Professor of History in the Worcester Polytechnic Institute; (13) The Poor in Great Cities, by Dr. Frank I. Herriott (Annals Amer. Acad., 1896); (14) Bracton : A Study in Historical Jurisprudence, by G. C. Lee (American Law Review, January-February, 1897); (15) How Minnesota Became a State, by Dr. T. F. Moran, Professor of History, Purdue University, formerly Fellow of History in Baltimore (Minnesota Historical Society, 1896); (16) Teaching of American History, by Dr. George Petrie, Professor of History, Alabama Polytechnic Institute (Sewanee Review, May, 1896); (17) The Dissolution of the Solid South; Homicide in the Southern States; Modern Taxation,—all three by Dr. B. J. Ramage, Dean of the Law School, University of the South (Sewanee Review, 1896); (18) Social Control, a series of articles by Prof. E. A. Ross, of the Leland Stanford Junior University (American Journal of Sociology, 1896); (19) The Story of the Mine, by Charles Howard Shinn (New York, 1896); (20) Causes of the Maryland Revolution of 1689, by Dr. F. E. Sparks (Studies, November-December, 1896); (21) Alexander Hamilton and John Peter Zenger, by Dr. Bernard C. Steiner (Penn. Magazine of History, October, 1896); (22) Rev. Thomas Bray and His American Libraries, by Dr. Steiner (American Historical Review, October, 1896).

There were nine candidates for the degree of Doctor of Philosophy in History, Politics, and Economics in the year 1897. Six of these candidates pursued History, and three Economics as their principal subject. The prevailing combination in this department for the degree of Ph. D. is History, Economics, and Politics. Social Science or Practical Sociology is now included under the head of Social Economics. Historical Sociology is taught in connection with Institutional History. A useful academic service has been rendered by Professor J. F. Jameson, of Brown University, formerly Fellow and Associate at the Johns Hopkins University, in the preparation of a list of candidates for the Doctor's degree in American History, with their respective theses, in the following institutions of learning: Brown (2 candidates), Bryn Mawr (2), Columbia (2), Cornell (2), Harvard (12), Radcliffe (2), Johns Hopkins (6), Michigan (1), Pennsylvania (2), Wisconsin (2). This compilation affords a convenient synopsis of the chosen lines of research in American History. The early announcement of theses will check or prevent the duplication of work. Attention is called to the valuable statistics regarding the number of graduate students in the different American universities, tabulated yearly by Professor A. B. Hart for the Harvard Graduates' Magazine, March, 1897.

Professor Herbert B. Adams, while directing the work of the department and of the various publications, has conducted the following courses:
1. *Historical Seminary*. Two hours fortnightly, throughout the year, with twenty graduate students. The various instructors and associates in the department have usually been present and have contributed greatly to the interest of the proceedings. Among the original papers discussed in the Seminary were the following: (1) Impressions of Summer Travel in England, by H. B. Adams; (2) Relations Between Canada and the United States, by J. M. Callahan; (3) Philip Freneau, the Poet-Publicist, by S. E. Forman; (4) Practical Value of Abstract Political Thinking, by W. W. Willoughby; (5) Colonial Court System of North Carolina, by E. W. Sikes; (6) Changes in Church Organization in the Ninth Century, by Guy Carleton Lee; (7) Industrial Communities in Europe, by W. F. Willoughby; (8) Chesapeake and Ohio Canal, by G. W. Ward; (9) Ancient Greek Coinage, by J. M. Vincent; (10) The Economic History of Virginia, by J. C. Ballagh; (11) America as the Political Utopia of Young Germany, by T. S. Baker; (12) Moral Justification of the State's Authority, by W. W. Willoughby; (13) Virginia Immediately After the War, by W. T. Thom; (14) The Relation of Geography to History, by G. C. Lee; (15) Quit Rents and Currency in North Carolina, by E. W. Kennedy; (16) Introduction to Southern Economic History, by J. C. Ballagh.

2. *History of Ancient Civilization*, with a class of twenty-five undergraduates and ten graduates, two hours weekly, throughout the year. The course began with a study of Chinese civilization and religions, and continued with a survey of Japanese history and of the recent conflict of nations in the Far East. The historic religions and culture of India, Chaldaea, Assyria, Egypt, Phoenicia, and Palestine then followed. Class lectures were supplemented by required readings, oral reports, and written digests upon specified themes.

3. *Institutional History*, with a class of fifteen graduate students, two hours weekly, first half-year. This course of lectures related to the early history of society, the development of the family, tribes, nations, and municipal states, with special reference to the city commonwealths of old Greece. Syllabi were prepared by the class, representing the results of private reading in connection with the lectures, so that each student could arrange his own materials for a possible course of class instruction.

4. *History of Prussia*, with a class of fifteen graduate students, two hours weekly, second half-year.

5. *Educational Conference*, with eighteen graduate students, one hour a week, through the year. This course has been already described in connection with other conferences.

Associate Professor John Martin Vincent has conducted the following courses:

(1) *History of the Reformation*, with fifteen graduate students, two hours weekly, during the first half-year. The reforming movements in
Germany, Switzerland, and England were examined with a view of showing their various political and social causes, and their eventual effects upon the organization of society.

(2) *The Puritan Revolution in England*, with fifteen graduate students, two hours weekly, during the second half-year. The growth of Puritan ideas after the ecclesiastical separation of England, the influence of Geneva upon theological opinion, the rise of independency in church government, and, finally, the supremacy of the Independents in politics, were the topics illustrated by contemporary documents. An intimate acquaintance with this period was insisted upon as a foundation for early American history.

(3) *Historical Conference*, one hour weekly Six graduate students have been engaged in co-operative studies of special problems in History. This year the topics have been chosen from disputed points in European and English History. Reports involving criticism and interpretation of sources and the careful reconstruction of narrated events, have been presented by the students and subjected to the joint criticism of instructor and class. The Invention of Printing, the Danish Invasion of England, the Dissolution of the Monasteries in England, were among the subjects which were subdivided into topics for examination. Marked advancement over the results of former years was apparent.

(4) *European History*, with twenty-one undergraduate students, two hours weekly, throughout the year. By the use of text-books and lectures the history of the leading European nations was traced from the fall of Rome to the close of the French Revolution.

(5) *Medieval and Modern History*, with twenty-four undergraduate students, two hours weekly, throughout the year. This was a course provided for students not members of the Historical Group (VI). Particular attention was given to the development of modern states and society out of mediæval ideas and conditions.

Dr. Bernard C. Steiner, Associate in History, conducted a class of three graduates and fourteen undergraduates in *American Political and Constitutional History*, two hours a week, throughout the year.

Special attention was devoted to the period from 1765 to 1876. After a few preliminary lectures on Colonial History, the instructor introduced his class to the formative period of the Constitution and made good use of Cooley's Constitutional Law. For supplementary reading The Federalist and Vol. I of Bryce's American Commonwealth were employed. Lectures were given on the History of the United States under the Constitution. The Guide to American History, by Channing and Hart, was used as a syllabus, and Woodrow Wilson's "Division and Reunion" as a text-book. Papers were prepared on specified subjects by members of the class. More than usual interest was shown in the discussion of assigned topics.
Dr. J. C. Ballagh, Instructor in Classical History, conducted a class course in *Greek and Roman History*, four hours weekly, throughout the year, with twenty-three undergraduate students. Greek history was studied through the period of Hellenism; and Roman history, to the reunion of the Eastern and Western Empires. Readings were required in Herodotus and Thucydides, with the use of Oman's text-book on the History of Greece. Other text-books used by the class were How and Leigh's History of Rome to the Death of Caesar, Capes' Early Empire, and Merivale's General History of Rome. Frequent essays and reports, involving select readings in classical historians and modern authorities, were a part of the required work. An attempt was made to illuminate classical history by representations of ancient art and by choice selections from ancient literature, in connection with the regular class work.

Mr. Guy Carleton Lee, Assistant in English History, conducted a class of six graduate and fifteen undergraduate students in *English Constitutional Law and History*, two hours weekly, throughout the year.

Professor James Schouler, LL. D., of Boston University Law School, who for several years has given valued courses of lectures to our department on American Constitutional and Political History, by special request gave a class course of twenty-five lectures on the *Principles of the Common Law*, with special reference to Personal Property. A syllabus of the lectures, with useful references to legal authorities, Blackstone and Kent, was prepared by Dr. Schouler and distributed to the class. The course was given four hours a week in January and the early part of February, 1897, to a class of seven students and a number of hearers.

Professor Woodrow Wilson, of Princeton University, who for many years has given an annual course of lectures to graduate students on Comparative Politics, gave twenty-five lectures on *Some Fundamental Notions of Government*. The course was given in the Donovan Room, five hours weekly, beginning January 28, 1897. The lectures were open, not only to graduate students, but to persons from the city who were specially interested in this field of study. An evidence of appreciation of Professor Wilson's public instruction was seen in a gift of $50 by two ladies for the purchase of standard books of historical and political science for the benefit of the University. The class attendance numbered twenty-one students and about sixty hearers.

Dr. W. W. Willoughby, Associate in Politics, gave a graduate course of lectures, two hours weekly, throughout the year, on the *Federal State in Theory and Practice*. The class numbered fourteen students, of whom eight passed the final written examination. The first semester was devoted to (1) a consideration of the principles in accordance with which the status of a political body is determined; (2) the classification of unions and associations of States; (3) the historical development of theories of the Federal State, and (4) an analysis of the federal charac-
teristics of the United Netherlands, Switzerland, Germany, Canada, and South and Central American federations. During the second semester, attention was confined to the United States Constitution, and an account was given of the various theories which have been held regarding its character by publicists, our public men, and the judiciary. Based upon the foregoing, a critical examination was made of the doctrines of nullification, secession, and reconstruction, as they have come forward during the course of our constitutional history.

Dr. E. R. L. Gould gave a class course of nineteen lectures on the Social Treatment of the Dependent and Delinquent Classes. General and special methods of caring for paupers, adult and juvenile dependents, delinquent children, and prisoners, in Great Britain, France, Belgium, Germany, and the United States, were treated historically and critically, and from the standpoint of social results. Ten students attended.

Dr. Gould also delivered a course of six public lectures in the Donovan Room on Present Problems in Municipal Sociology. The titles of the lectures were Popular Recreation; the Housing of Wage Earners; the Liquor Problem, and its Rational Treatment; the Care of the Unemployed; the Church and the Masses; and the Relation of Civic Reform to Social Progress. The lectures were attended by ten students and about sixty hearers.

The work in Economics has been highly satisfactory. A special feature to be noted is the completion of the monographs on economic history and on the history of economics, forming the fifteenth series of the Studies in Historical and Political Science. Another special feature is the progress made in the plan of carrying on from year to year the original study of the development of economic science in America. An excellent paper on Daniel Raymond, the first systematic writer on political economy in America, by C. P. Neill, was completed and published in the volume of the Studies mentioned above. The first monograph in this field was on Benjamin Franklin as an Economist, by Wm. A. Wetzel (Studies, September, 1893), and together they make a good beginning in the series planned. A more detailed statement of the work in Economics follows:

Associate Professor Sidney Sherwood conducted the following courses for graduates:

1. Economic Conference, which met regularly on alternate Friday evenings, with sixteen students. Special attention was given to the review of important articles in the leading economic journals. The following original papers were read and discussed: Financial History of Baltimore, by J. H. Hollander; Finances of the Confederacy, by E. A. Smith; Origin of the Distinction between Capital and Interest, by F. R. Rutter; Bayview, Its Organization and Methods, by Dr. Mary
Courses of Instruction, 1896–97.

Sherwood; the Baltimore and Ohio Railroad, by M. Reizenstein (Studies, July-August, 1897); Distinction between Public and Private Wealth, by C. P. Neill; Economic Aspects of Irrigation in Utah, by C. H. Brough; Daniel Raymond, by C. P. Neill (Studies, June, 1897); the South American Trade of Baltimore, by F. R. Rutter (Studies, September, 1897). Dr. Hollander and Dr. Moore rendered efficient aid in the conduct of the Conference.

2. American Economics. This class has met weekly, having in attendance only those students who are making a special study of Economics. During the first half-year the writings of Henry C. Carey were critically studied. The latter half of the year was occupied with the preparation of original papers by members of the class on special topics connected with the development of the protection theory in America. In carrying out the plan above noted, it is proposed next year to make a special study of American writers on money and banking.

3. Principles of Pure Economics. This course occupied the first half-year, two hours weekly, and was attended by fourteen students. The purpose of this course was to restate and rearrange in outline the principles of Economics from the standpoint of the most recent studies. The individualistic basis of industrial organization was emphasized and the course of economic processes was traced from their starting point in the wants of individuals through the complicated mechanism of industrial society. The laws of economic development were also formulated.

4. Transportation. This course occupied two hours weekly, during the second half-year, and was attended by thirteen students. The development of the railroad problem in this country was traced in detail. Special attention was given to the work of the Interstate Commerce Commission, and the principles governing railway rates were discussed, as well as the relation between the government and the railways.

Dr. J. H. Hollander, Associate in Economics, conducted the following graduate courses:

1. Municipal Finance, two hours weekly, during the first half-year, with twelve graduate students. The theory and practice of municipal revenue, expenditure, indebtedness, and financial administration were considered, with particular reference to American municipalities. Special reports were presented by individual members of the class upon the finances of Philadelphia, San Francisco, Washington, Chicago, Richmond, Detroit, and Ogden.

2. English Economic Thought Before Adam Smith. Two hours weekly, during the second half-year, with twelve graduate students. The important economic writers of the sixteenth, seventeenth, and eighteenth centuries were discussed and attention was paid to contem-
Temporary economic conditions. Class reports were presented upon the economic contributions of Berkeley, Mandeville, Barbon, Hobbes, North, Gee, Ticker, Culpeper, Defoe, and Law.

Dr. H. L. Moore gave five lectures to a class of eight graduate students upon the Application of Mathematics to Political Economy. The course was intended as an introduction to the use of mathematics in pure political economy and statistics. The topics treated were the interrelation of mathematics and philosophy in their historical development, the philosophic nature of the mathematical method, its peculiar fitness for application to pure political economy, and the contributions of mathematical economists to political economy.

Dr. Moore also conducted the undergraduate class in Applied Economics, a two-hour course forming part of Minor Political Science, attended by thirteen students. During the first half-year the Development of Economic Life and Thought was studied; The Tariff and Transportation formed the subject of work the second half-year.

The following undergraduate classes were conducted by Doctors Sherwood and Hollander:

1. Elements of Economics. A two-hour course, part of Minor Political Science, attended by thirty-seven students. The subjects treated were the Elementary Principles of Economics, first half year, and Money and Taxation, the second half.

2. Advanced Economics. An elective class composed of four undergraduates and about seven graduates, met two hours weekly, through the year. Special attention was given to recent tendencies in industrial life and to the newer theories. The text-books used were Wells' Recent Economic Changes and Hadley's Economics.

Herbert B. Adams,
Professor of American and Institutional History.

Philosophy.

The following report of the work in Philosophy, during the academic year 1896–97, is respectfully submitted:

All candidates for the degree of Bachelor of Arts are required to follow a course in Logic, Psychology, and Ethics during their last year of residence. On account of the number and variety of the subjects included in it, five hours a week, instead of four, are assigned to this course. It is intended to make the treatment as simple and untechnical as possible, in order to meet the needs of those to whom these studies are new, at the same time calling attention to fundamental problems, so that what is done may serve as an introduction to general philosophical
Courses of Instruction, 1896-97.

study. Text-books have been used in each subject, as affording definite material of acquisition; but informal lectures, discussions in the class, and passages from various authors assigned for reading, have been largely relied upon in the presentation. Each member of the class has been required to prepare two essays in the course of the year. Thirty-four students have been in attendance.

The opening weeks of the year were devoted to Logic, Jevons' Elementary Lessons in Logic and Fowler's Elements of Inductive Logic being made the basis of instruction, with frequent references to the works of Mill, Bain, Keynes, and other writers. Facility in the use of logical forms and methods was sought through oral and written exercises, and the theory of deduction and of induction was discussed, with the view of determining the nature and value of these processes, and their relations to each other in scientific investigation and proof.

The instruction in Psychology attempted to give a general view of the results of experimental methods of study, and also to emphasize the facts of conscious experience as known through introspection. Baldwin's Elements of Psychology and Ladd's Outlines of Psychology were used as text-books, supplemented by many references to the works of other authors. A series of lectures on the anatomy and physiology of the nervous system was given, as a part of the course, by Dr. L. F. Barker.

The work in Ethics was mainly confined to the theoretical and historical aspects of the subject; questions of applied ethics were, for lack of time, but slightly considered. The various forms of feeling native to our constitution and constituting the possible motives of conduct; the conditions and nature of the sense of obligation; the authority of conscience; the diversities of moral sentiment; the historic theories of morals—hedonism, utilitarianism, intuitionism, and the application to ethical theory of the doctrine of evolution—these are some of the topics treated. Fowler's Principles of Morals, part ii, was employed as a text-book, but the instruction was necessarily given, to a considerable extent, through lectures. In kind response to our invitation, Mr. Eugene Levering, Dr. James Carey Thomas, and Skipwith Wilmer, Esq., presented to the class certain considerations that might be of service in the choice of a vocation, speaking, respectively, in regard to a business career, the profession of medicine, and the profession of law. For several years, addresses of this kind have been given to the class approaching graduation—greatly to the interest and profit of the young men.

One hour each week was used, during the first half of the year, for a brief outline of the History of Philosophy, and the survey was brought down, in a summary way, to the modern period. During the latter part of the year, a weekly lecture was given for the benefit of those who were able to attend it as a voluntary exercise.
Drawing.

A course in the History of Philosophy, for graduate students, was conducted during the year, consisting of the reading and discussion of representative works in modern philosophy, from Descartes to Kant. The works read were as follows: Bacon's *Novum Organum*, book i and a part of book ii; Descartes' *Method and Meditations*; Spinoza's *Ethics*; Leibnitz's *Monadology*; Locke's *Essay on Human Understanding*, books i, ii, iv; Berkeley's *Principles of Human Knowledge*; Hume's *Treatise on Human Nature*, book i; a portion of Kant's *Critique of Pure Reason*. The class met once a week for discussion and criticism.

Edward H. Griffin,
Professor of the History of Philosophy.

Drawing.

The following report of the Undergraduate Class in Drawing, during the term 1896-97, is respectfully submitted:

- Total number of students attending all courses, 57.
- Total number of students, free-hand, 1st and 2d terms, 29.
- Preparatory Medical, 7.
- Biological, 7.
- Preparatory Electrical, 10.
- Special (Saturday class), 4.

The work in Drawing has included the usual course in free-hand, for the first half-year, for all students. During the second part of the term, students preparing for the courses in Medicine and Biology continued the work in free-hand drawing, but of a character more directly applied to these studies.

Students taking the course preparatory to Applied Electricity, have, for the second half-year, taken the course in instrumental or constructive drawing, including work in descriptive geometry and perspective.

For the benefit of students engaged in Biological research work, a special course was arranged for the practical illustration of the work by drawings made from natural specimens. This class was continued during the latter part of the term.

S. Edwin Whiteman,
Instructor in Drawing.
## TABULAR STATEMENT OF COURSES OF INSTRUCTION, 1896-97.

### INSTRUCTOR

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
<th>No. of hours</th>
<th>No. of students, 1st half-year</th>
<th>No. of students, 2nd half-year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craig.</td>
<td>Mathematics and Astronomy.</td>
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<tr>
<td></td>
<td>Partial Differential Equations.</td>
<td>3</td>
<td>10</td>
<td>4</td>
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<tr>
<td></td>
<td>Mathematical Conference. (First half-year.)</td>
<td>1</td>
<td>10</td>
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<td>Mathematical Seminar. (First half-year.)</td>
<td>1</td>
<td>10</td>
<td></td>
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<tr>
<td>Craig.</td>
<td>Theory of Surfaces. (First half-year.)</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Craig.</td>
<td>Fuchsian Functions and Linear Differential Equations. (Second half-year.)</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Craig.</td>
<td>Geodesic Lines and Deformation of Surfaces. (Second half-year.)</td>
<td>3</td>
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<tr>
<td>Chessin.</td>
<td>Theory of Functions. (Elementary Course.)</td>
<td>3</td>
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<tr>
<td>Chessin.</td>
<td>Elliptic Functions.</td>
<td>2</td>
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<tr>
<td>Hulburt.</td>
<td>Differential and Integral Calculus. (Second half-year.)</td>
<td>4</td>
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<td>Hulburt.</td>
<td>Theory of Substitutions. (Second half-year.)</td>
<td>3</td>
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<td>Hulburt.</td>
<td>Synthetic Geometry. (First half-year.)</td>
<td>3</td>
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<tr>
<td>Hulburt.</td>
<td>Differential Equations.</td>
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<td>10</td>
<td>6</td>
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<tr>
<td>Hulburt.</td>
<td>Determinants; Calculus. (First half-year.)</td>
<td>4</td>
<td>15</td>
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<tr>
<td>Cohen.</td>
<td>Theory of Invariants.</td>
<td>2</td>
<td>6</td>
<td>5</td>
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<tr>
<td>Cohen.</td>
<td>Analytic Geometry: Minor Course. (First half-year.)</td>
<td>4</td>
<td>20</td>
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<tr>
<td>Cohen.</td>
<td>Theory of Equations; Analytic Geometry. (Second half-year.)</td>
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<tr>
<td>Cohen.</td>
<td>Elementary Solid Geometry. (First half-year.)</td>
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<tr>
<td>Cohen.</td>
<td>Trigonometry; Analytic Geometry: Elem. (Second half-year.)</td>
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<tr>
<td>Lovett.</td>
<td>Lie's Contact Transformations. (Second half-year.)</td>
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<td>Poor.</td>
<td>Astronomical Computations. (First half-year.)</td>
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<tr>
<td>Poor.</td>
<td>Orbits and Ephemerides. (First half-year.)</td>
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<td>Poor.</td>
<td>Advanced Theoretical Astronomy. (Second half-year.)</td>
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<tr>
<td>Poor.</td>
<td>Theory of Instruments. (Second half-year.)</td>
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<tr>
<td>Poor.</td>
<td>Descriptive Astronomy.</td>
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<tr>
<td>Poor.</td>
<td>Spherical and Practical Astronomy. (First half-year.)</td>
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<tr>
<td>Poor.</td>
<td>Observatory Work.</td>
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<td><strong>PHYSICS.</strong></td>
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<td>Rowland.</td>
<td>Electricity and Magnetism.</td>
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<td>19</td>
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<td>Rowland.</td>
<td>Journal Meeting.</td>
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<td>Ames.</td>
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<td>Physical Seminary.</td>
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<td>Theoretical Mechanics. (First half-year.)</td>
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<td>Ames.</td>
<td>Electric Oscillations and Waves. (Second half-year.)</td>
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<td>General Physics: Major Course.</td>
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<td>General Physics: Minor Course.</td>
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<td>Duncan.</td>
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<td>Geer.</td>
<td>Mechanics of Engineering.</td>
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## Tabular Statement of Courses

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
<th>No. of hours per week</th>
<th>No. of students in first half-year</th>
<th>No. of students in second half-year</th>
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<tr>
<td>Rowland, Duncan, Ames, Hering, Geer, Bliss, Humphreys</td>
<td>Laboratory Work.</td>
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<td>Humphreys</td>
<td>Experimental Physics for Medical Students. (First half-year.)</td>
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<td></td>
<td>Special Laboratory Course for intending Medical Students.</td>
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<td></td>
<td><strong>Chemistry.</strong></td>
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<td>Rensen</td>
<td>Theoretical Chemistry. (First half-year.)</td>
<td>2</td>
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<td></td>
<td>Compounds of Carbon: Advanced Course. (Second half-year.)</td>
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<td>Rensen</td>
<td>Journal meeting.</td>
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<td>40</td>
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<td>Randall, Morse, Gilpin, Rensen,</td>
<td>General Chemistry: Minor Course. (First half-year.)</td>
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<td>Randall,</td>
<td>Analytical Chemistry.</td>
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<td>Renouf, Randell, Gilpin,</td>
<td>Organic Chemistry: Major Course. (Second half-year.)</td>
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**SEMITIC LANGUAGES.**

**GERMAN.**

*Advanced Work.*

**Major Course.**

**Minor Course: Class A.**

**Minor Course: Class B.**

**Supplementary Courses.**
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<td>Warren, F.M.</td>
<td>French Lyric Poetry. (Twenty lectures.)</td>
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<td>Warren, F.M.</td>
<td>The French Drama. (Nine lectures.)</td>
<td>2</td>
<td>19</td>
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<tr>
<td>Bonnotte</td>
<td>French Conversation. (Two classes.)</td>
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<td>18</td>
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<tr>
<td><strong>English.</strong></td>
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<tr>
<td>Bright</td>
<td>English Seminary.</td>
<td>4</td>
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<td>Bright</td>
<td>English Sounds and Inflections. (Lectures.)</td>
<td>1</td>
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<td>Bright</td>
<td>Conferences on Literature and Grammar. (First half-year.)</td>
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<td>Bright</td>
<td>Interpretation of Texts.</td>
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<td>Bright</td>
<td>Anglo-Saxon.</td>
<td>2</td>
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<td>Bright</td>
<td>Journal Meeting. (Alternate weeks.)</td>
<td>2</td>
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<tr>
<td>Browne</td>
<td>&quot;Classical&quot; School of XVIII Century.</td>
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<tr>
<td>Browne</td>
<td>Elizabethan Lit.; Early Scottish Poets: Major Course.</td>
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<tr>
<td>Browne</td>
<td>English Literature; Early English: Minor Course.</td>
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<td>Greene</td>
<td>History and Theory of Rhetoric.</td>
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<td>Greene</td>
<td>English Literature: Elective Course.</td>
<td>2</td>
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<td>Greene</td>
<td>English Literature: Second year.</td>
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<td>4</td>
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<td>Greene</td>
<td>Rhetoric and Composition.</td>
<td>3</td>
<td>47</td>
<td>46</td>
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<tr>
<td><strong>Historical and Political Science.</strong></td>
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<tr>
<td>Adams</td>
<td>Seminary of History and Politics. (Alternate weeks.)</td>
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<td>Institutional History.</td>
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<td>Adams</td>
<td>History of Civilization.</td>
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<td>Educational Conference.</td>
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<td>Vincent</td>
<td>Historical Conference.</td>
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<td>European History.</td>
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<td>Vincent</td>
<td>Reformation.</td>
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<td>Vincent</td>
<td>Medieval and Modern History.</td>
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<tr>
<td>Instructor</td>
<td>Courses</td>
<td>No. of hours per week</td>
<td>No. of students 1st half-year</td>
<td>No. of students 2nd half-year</td>
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<td>Ballagh</td>
<td>Greek and Roman History.</td>
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<td>Sherwood</td>
<td>Principles of Economics. (First half-year.)</td>
<td>11</td>
<td>14</td>
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<td>Sherwood</td>
<td>American Economics.</td>
<td>6</td>
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<td>Sherwood</td>
<td>Economic Seminar. (Alternate weeks.)</td>
<td>10</td>
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<td>Sherwood</td>
<td>Elements of Economics.</td>
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<td>Hollandier</td>
<td>Transportation. (Second half-year.)</td>
<td>3</td>
<td>18</td>
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<tr>
<td>Moore</td>
<td>Economics: Minor Course.</td>
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<td>Hollandier</td>
<td>Municipal Finance. (First half-year.)</td>
<td>2</td>
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<tr>
<td>Sherwood</td>
<td>Economics: Elective Course.</td>
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<tr>
<td>Hollandier</td>
<td>Economic Thought before Adam Smith. (Second half-year.)</td>
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<tr>
<td>Willoughby</td>
<td>Theory of the State.</td>
<td>3</td>
<td>28</td>
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<td>Steiner</td>
<td>American Constitutional History.</td>
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<td>Lee</td>
<td>English Constitutional Law and History.</td>
<td>2</td>
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<td>Schouler</td>
<td>Law of Personal Property.</td>
<td>2</td>
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<td>Wilson</td>
<td>Science of Government. (Twenty-five lectures.)</td>
<td>2</td>
<td>21</td>
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<td>Gould</td>
<td>Municipal Sociology. (Second half-year.)</td>
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<td>Griffin</td>
<td>History of Philosophy.</td>
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<td>Griffin</td>
<td>Logic. (Until December 24.)</td>
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<td>Griffin</td>
<td>Psychology. (January 1 to April 1.)</td>
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<td>Griffin</td>
<td>Ethics. (After April 1.)</td>
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<td>Whiteman</td>
<td>Freehand, Constructive, and Perspective Drawing.</td>
<td>6</td>
<td>47</td>
<td>49</td>
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<td>Whiteman</td>
<td>Special Instruction.</td>
<td>6</td>
<td>3</td>
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<tr>
<td>Geer</td>
<td>Mechanical Drawing. (First half-year.)</td>
<td>6</td>
<td>13</td>
<td>16</td>
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<tr>
<td>Geer</td>
<td>Mechanical Drawing. (Second half-year.)</td>
<td>6</td>
<td>16</td>
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<td>Geer</td>
<td>Special Instruction. (Second half-year.)</td>
<td>3</td>
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DEGREES CONFERRED, 1897.

Doctors of Philosophy.


NOAH ERNEST DORSEY, of Annapolis Junction, Md., A. B., Johns Hopkins University, 1893. Subjects: Physics, Mathematics, and Chem-


William Ritchie Fraser, of Pictou, N. S., A. B., Dalhousie University, 1882. Subjects: Greek, Historical Jurisprudence, and Latin. Thesis: Metaphors in Æschines, the Orator. Referees on thesis: Professor Spieker and Dr. Miller.


Edwin Wexler Kennedy, of Durham, N. C., A. B., University of Tennessee, 1880. Subjects: History, Historical Jurisprudence, and...

Francis Plaisted King, of Portland, Me., A. B., Colby University, 1890. Subjects: Geology, Paleontology, and Chemistry. Thesis: Basic Magnesian Rocks Associated with the Corundum Deposits of Georgia. Referees on thesis: Professor Clark and Dr. Mathews.


Degrees Conferred, 1897.


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Degrees Conferred, 1897.


Doctors of Medicine.

Charles Russell Bardeen, of Syracuse, N. Y., A. B., Harvard University, 1893.

Thomas Richardson Brown, of Baltimore, A. B., Johns Hopkins University, 1892.

Walter S. Davis, of Minneapolis, Minn., S. B., Amherst College, 1893.

Louis Philip Hamburger, of Baltimore, A. B., Johns Hopkins University, 1893.

Guy Le Roy Hunner, of Madison, Wis., S. B., University of Wisconsin, 1893.

Irving Phillips Lyon, of Hartford, Conn., A. B., Yale University, 1893.

William George MacCallum, of Dunnville, Ont., A. B., University of Toronto, 1891.

Charles Neil McBryde, of Blacksburg, Va., S. B., University of South Carolina, 1891.

James Farnandis Mitchell, of Baltimore, A. B., Johns Hopkins University, 1891.

Joseph Longworth Nichols, of Cincinnati, Ohio, A. B., Harvard University, 1893.

Eugene Lindsay Opie, of Baltimore, A. B., Johns Hopkins University, 1893.

Mary Secord Packard, of Bayonne, N. J., A. B., Vassar College, 1892; Harvard Summer School, 1893.


Clement Andarieze Penrose, of Baltimore, A. B., Johns Hopkins University, 1893.

Richard Pearson Strong, of Baltimore, Ph. B., Yale University, 1893.
Degrees Conferred, 1897.

Bachelors of Arts.

Herbert Henry Adams, of Washington, D. C.
Frederick Henry Baetjer, of Winchester, Va.
Frank Ringgold Blake, of Baltimore.
Edward Ligan Bowlus, of Middletown, Md.
Charles Keyser Edmunds, of Baltimore.
Howard Main Gassman, of Hagerstown, Md.
Neil Duncan Graham, of Falls Church, Va.
Charles Saloman Guggenheimer, of New York City.
Frank Arnold Hancock, of Baltimore.
Landry Harwood, of Baltimore.
Eugene deForest Heald, Jr., of Annapolis, Md.
Michael Ernest Jenkins, of Baltimore.
Harry M. Kaufman, of Washington, D. C.
Frank Albert Killmon, of Baltimore.
John Edgar Knipp, of Baltimore.
Theodore Morgan Leary, of Baltimore.
William Strobel Levy, of Frederick, Md.
Warfield Theobald Longcope, of Baltimore.
Charles Edward Lyon, of Mount Wilson, Md.
Henry Clay McComas, Jr., of Baltimore.
George Loric Pierce Radcliffe, of Lloyd's, Md.
Herbert Meredith Reese, of Baltimore.
Alexander Henry Schulz, Jr., of Baltimore.
John Frederick Schuck, of Baltimore.
Henry Plant Shuter, of Baltimore.
Josiah Morris Slemons, of Salisbury, Md.
Samuel Hamilton Spragins, of Baltimore.
Albert Steinfield, of Baltimore.
James McLhany Thomson, of Summit Point, W. Va.
Albert James Underhill, of Baltimore.
George William Warren, of Portland, Me.
David Emrich Weglein, of Baltimore.
Dudley Williams, of Baltimore.
Henry Merryman Wilson, of Baltimore.
Charles Knickerbacker Winne, Jr., of Baltimore.

Proficients in Applied Electricity.

Wyatt Hamilton Allen, of California, Ph. B., Yale, 1896.
Joseph Hockman Bowman, of Va., A. B., Franklin and Marshall, 1893.
Walter Herman Eisenbrandt, of Baltimore.
David Sterrett Pindell, of Md., A. B., Johns Hopkins, 1895.
REPORT OF THE MARINE LABORATORY, 
SEVENTEENTH SESSION.

TO THE PRESIDENT OF THE UNIVERSITY:

In accordance with your request, I submit the following report of the work of the seventeenth session of the Marine Laboratory.

Early last June a party of students from the biological department of the University, under the charge of Dr. J. E. Humphrey, Associate Professor of Botany, left Baltimore for the purpose of carrying on researches in zoology and botany in Jamaica. A small seaport town on the north side of the island, Port Antonio, which is in almost daily communication with our cities by the steamships which carry fruit, was selected as the most accessible place where material for research in both tropical botany and zoology are to be found in abundance. It is close to the open ocean, on a deep land-locked harbor, and I know of few spots in Jamaica more favorable for studying marine life. As it lies at the foot of a range of high mountains well watered and intersected by deep ravines, and covered from top to bottom with luxuriant tropical vegetation, Prof. Humphrey, who was well acquainted with the interior of Jamaica, knew of no better place for botanical research.

Rooms for use as a laboratory were accordingly rented by the University from the Fruit Company at Port Antonio, and were equipped with books and apparatus which had been taken from the University, and they were occupied, for about two months, by the following investigators and students:

Prof. J. E. Humphrey, in charge.
Dr. F. S. Conant, Bruce Fellow, J. H. U.
Dr. H. L. Clark, Fellow J. H. U.
Mr. A. Fredholm, Botanist, Baltimore.
Mr. J. E. Duerden, Curator, Jamaica Institute, Kingston.
M. T. Sudler, Student, J. H. U.
Caswell Grave.
E. W. Berger.
F. C. Fisher.
J. M. Slemons, Student, J. H. U.
C. B. Wilson, formerly a Student, J. H. U.
F. L. Stearns, Student, Boston.

Port Antonio proved to be all we had hoped, and every member of the party was soon enabled to find and to study with advantage the subjects for which he made the journey, for Prof. Humphrey proved to be
The Marine Laboratory.

well qualified to guide the work of zoologists as well as botanists. Nearly every member of the party wrote to tell me of his own progress in his work, and of the value of Prof. Humphrey’s advice and direction, of his wide acquaintance with the animal life of tropical lands and waters, and of his clear grasp of the special problems of zoology.

The following is a brief outline of the work of some of the members of the party:

Dr. Clark had begun in Jamaica, in 1896, and had completed in Baltimore during the last academic year, an account of a life-history of a viviparous Holothurian, a *Synapta*, which the members of our party had found in Jamaica some years ago, and his work, which was accepted last June, as his thesis for his degree of Ph. D., is now in press. He returned to Jamaica last summer to continue his studies, and he found at Port Antonio a second viviparous Holothurian, a *Chirodota*, and traced its life-history. He also made many additions to his collection of the Echinoderms of Jamaica which contains a number of new species.

Mr. Sudler, who had also visited Jamaica in 1896, for the purpose of aiding me in my own study of the embryology and metamorphosis of Lucifer, made his second visit last summer with the same object, which was successfully accomplished, as he has put into my hands, for study, a collection of the eggs and larvae which fills all the gaps in his collection of last year and renders the series complete. Mr. Sudler also carried on studies in the life-history of other Crustacea.

Mr. Fredholm prepared a collection of more than three hundred plants from the vicinity of Port Antonio, and among them are a number which are of especial interest to the systematic botanist.

Mr. Duerden, the Curator of the Museum of the Jamaica Institute in Kingston, spent nearly a month at Port Antonio, as the guest of the laboratory, and he made use of its facilities to continue his study of the Actinaria of Jamaica, to which he was enabled to make important additions. He also collected material for future embryological work upon the same group.

At my suggestion, Mr. Grave devoted his time to the study of the Ophiurians, and he was able, through the aid of Prof. Humphrey, to obtain an abundant supply of embryological and histological material, and he is now engaged in studying it in Baltimore. He also collected a number of species of Ophiurians, of which few had previously been known to occur in Jamaica.

Mr. Berger had, at my suggestion, undertaken the study of the Pseudoscorpions, and he obtained a good supply of eggs and embryos, and he also succeeded in bringing some of the adult animals to Baltimore alive.

While the party was in Jamaica, the island was visited by a committee from the American Association of Botanists, who had been appointed to inspect various places in the American tropics, for the purpose of select-
The Marine Laboratory.

ing a place for the establishment of a permanent tropical botanical laboratory. The committee visited Port Antonio, and in company with Prof. Humphrey explored that part of Jamaica.

His letter says that they were much impressed with the botanical advantages of Jamaica, although they intended to visit other islands before any point was selected.

Prof. Humphrey completed the work of the season, and after seeing all the younger members of the party safely started for home, he, in company with Conant and Clark and Fredholm, began on Saturday, August 14th, to pack the apparatus and collections, intending to sail on August 17th, but the plans were interrupted by the sickness of Prof. Humphrey, who died on August 17th at Port Antonio. The gravity of his case was not appreciated by the doctors until a few hours before the end, which came with terrific rapidity. Mrs. Humphrey, who was with him, did not know that his condition was even serious until she was informed by the doctors that he was dying.

Mr. Fredholm, who is familiar with tropical diseases, urged Conant and Clark to entrust Mrs. Humphrey to his care, and to leave the island by a steamship which started that night; but they refused, choosing rather to remain with her until they could accompany her to her home and leave her among friends, but before she was able to leave the island Clark himself contracted the disease, and while the attack was slight and soon over, he and Conant were delayed until September 6th. After Fredholm had seen all the members of the party embarked for home, and after most of the white residents had deserted Port Antonio, he himself sailed for Baltimore, which he reached in good health September 20th, to hear on landing that Conant had been taken ill on the second day at sea, and that while he had reached Boston alive on Sunday, September 12th, he had died the next day at the Massachusetts General Hospital. All the other members of the party have been and are still in good health.

Prof. Humphrey, who was much interested in the study of the vegetable cell, and in the changes that accompany fertilization and cell division, has left many notes on these subjects; and he also collected in Jamaica much valuable embryological material for the study of cytological problems in algae, in the palms, and in plants belonging to the pepper and ginger families. It is to be hoped that this material, which was collected at such great cost, may be used by other botanists, as it would have been used by him had he lived, to increase our knowledge of fundamental biological problems, and that some of his own unfinished notes may thus be supplemented and prepared for publication.
Dr. Conant revisited Jamaica last summer to continue studies which he had begun at Port Henderson in 1896, upon a rare group of jellyfish, the Cubomedusae, of which he had discovered in Jamaica two new species; one of them a representative of a new family.

He devoted last winter to the anatomical and histological study and the systematic description of these species, and his work on the Cubomedusae, which is complete and fully illustrated, was accepted, in June last, as a thesis for the degree of Ph. D.

As this work showed that the eyes of these jelly-fish present favorable conditions for studying the action of retinal pigment-cells under the influence of light and darkness, he returned to Jamaica to study the physiology of vision in the Cubomedusae, and he brought home notes and preserved specimens which will in time enable some one else to complete this work, and to furnish a supplement to Conant's thesis.

It has fallen to me to tell the story of the expedition to Jamaica and its tragical end, and it has seemed best to do this in a bald outline, and to omit the sad details. The accounts of the life and character and work of Prof. Humphrey and Dr. Conant, which will be prepared by others, will show what all who knew these men are only too well aware of—the loss which science and liberal culture have sustained through their untimely death; for each had enriched the literature of science by contributions which, while of permanent value in themselves, gave promise of still more valuable additions yet to come. The loss has fallen with especial severity upon this University and upon its biological department, where both Humphrey and Conant had inspired all who met them with their own earnest and single-minded devotion to the cause of truth.

It is inexpressibly sad to read now my last letter from Dr. Conant, from which I copy the following passage: "Dr. Humphrey had managed the laboratory in a way that deserved the highest praise. From the very first week I began to respect and admire him more than ever before, and my admiration grew steadily up to the very last. It is beautiful, conscientiously to say nothing but good concerning the dead,—to feel that one has not to overhaul the truth and make it presentable. In this case the honest plain-spoken truth is praise in and of itself." I can only add that the truth in itself, if it could be made clear to those who did not know Conant, would be the highest praise that one could give to him, for no one could have proved himself a brighter example, in all the relations of life.

My own acquaintance with Humphrey and Conant was not restricted to formal intercourse in the laboratory, for I had learned to count them among my warmest friends, and to look forward with pleasure to our meetings in the field and at the sea-shore, where conversation was often led to subjects which are not commonly held to be within the province
of science. My most vivid remembrance of both is their earnest and fearless devotion to truth, for while each found in his own nature convictions which seem hard to reconcile with mechanical conceptions, each was firmly convinced that the knowledge of nature is too beneficial and wholesome to end in anything but good. Each, has assured me, in one form of words or another, of his conviction, that the solution of these difficulties is to be sought in more and better knowledge of nature; and in the strength of this conviction each was prepared to make the search for truth the business of his life, even if rewards should be scanty or recognition long in coming, and to count everything else as unworthy to be compared with the advancement of the knowledge of nature.

I do not believe that any danger, however great or imminent, could, for an instant, have shaken this calm and settled purpose; for there is no one among us who is more convinced than they, that "The heart of him that hath understanding getteth knowledge. She is more precious than rubies; and all the things thou canst desire are not to be compared unto her."

W. K. Brooks,
Director.

October 3, 1897.
REPORT CONCERNING THE OFFICIAL STATE BUREAUS CONNECTED WITH THE JOHNS HOPKINS UNIVERSITY.

TO THE PRESIDENT OF THE JOHNS HOPKINS UNIVERSITY:

I submit, in accordance with your request, the following report concerning the work of the Maryland Geological and Economic Survey and the Maryland State Weather Service during the past year:

THE MARYLAND GEOLOGICAL SURVEY.

The Maryland Geological Survey was established by an act of the last General Assembly, which was approved by the Governor March 19, 1896. The act made provision "for the preparation and publication of reports and maps to illustrate the natural resources of the State, together with the necessary investigations preparatory thereto." Upon the appointment by the Commission, on March 25, of the State Geologist, whose duty it was, according to the resolutions adopted by the Board, "to propose and with the authority of the Commission to carry out such measures as shall be required for fulfilling the requirements of the act by which the Survey was established," the active work of the Survey began.

During the year and a half that the Survey has been in operation several lines of investigation have been undertaken. The first has embraced a preliminary survey of the State, in which general information in regard to all mines, pits and quarries has been ascertained by a personal visit on the part of a member of the Survey. This work was carefully divided by districts, a properly-equipped geologist being placed in charge of a single county or group of counties, as the case demanded. He frequently had associated with him one or more younger men, who constantly reported to him. Specially prepared forms were submitted to the proprietor of every industry which had to do with the mineral resources of the State. These forms, properly filled out and signed, have been placed on file at the Survey offices.

While this general work has been going on throughout the State, a second line of special investigations upon the building and decorative
stones has been in progress. Extensive collections of material and carefully prepared notes have been secured throughout the areas where these stones occur, and the specimens collected have been submitted to careful tests during the past year. An exhaustive study of the character, distribution and value of Maryland building and decorative stone has been made. This work has been under the direction of Professor George P. Merrill, of the United States National Museum.

A third line of investigation has been a magnetic survey. Stations have been established at every county town in Maryland, as well as at other points, while many of the early stations of the United States Coast and Geodetic Survey in the vicinity of the Chesapeake Bay have been re-occupied. The data furnished by these observations are of great value to all land surveyors, while they will also serve for the more fundamental investigations connected with the location of the great rock masses within the State. This work has been under the direction of Dr. L. A. Bauer, of the University of Cincinnati, and formerly of the United States Coast and Geodetic Survey.

A fourth line of work has been the preparation of topographic maps by coöperation with the United States Geological Survey. This work has been entirely carried on by the staff of the United States Geological Survey, and has already resulted in the survey of several hundred square miles in Kent, Cecil and Allegany counties. The topographical work will be continued, by arrangements which have been perfected with the National Survey, until a suitable map of the State is ultimately prepared.

A fifth line of investigation has been the detailed study and mapping of the geological formations and natural resources of the individual counties. The surveys of Allegany and Garrett counties are very nearly completed, while considerable advance has already been made in the investigation of Kent and Cecil counties. Reports upon the first two counties mentioned, in which will appear chapters upon the climate, physiography, geology and soils of the area, will be shortly prepared.

Volume one of the Maryland Geological Survey Reports has been published during the past year. This volume contains an account of the organization and objects of the Survey, an historical sketch of the investigations of the past upon Maryland geology, an outline of our present knowledge of the physical features of the State, a bibliography and cartography, and the first report upon the magnetic investigations. New hypsometric and geological maps accompany the volume, as well as many other diagrams and illustrations.

In conclusion, reference should be made to the aid which the Maryland Geological Survey, through Dr. Bauer, has rendered to the Attorney-General in his determination of the western boundary of the State. By an arrangement with those having the Western Boundary Survey in
The Maryland State Weather Service.

charge, Dr. Bauer was asked to direct the magnetic and astronomical work, and as a result of his expert knowledge of terrestrial magnetism and land surveying the line was run with far greater accuracy than would have been possible otherwise.

Much interest has been manifested throughout the State in the investigations of the Maryland Geological Survey, and the members have been received at all points with marked courtesy. The press of the State, especially, has commented widely and often upon the work of the Survey, and universally with a spirit of appreciation of the results already accomplished.

The Maryland State Weather Service.

The Maryland State Weather Service was established in May, 1891, under the joint auspices of the Johns Hopkins University, the Maryland Agricultural College and the United States Weather Bureau, and became an official organization by an act of the General Assembly, approved by the Governor April 6, 1892. Under authority granted by this act the Maryland State Weather Service was permanently established at the Johns Hopkins University, under the direction of a Board of Control nominated by the heads of the institutions above mentioned and commissioned by the Governor.

During the first five years of the existence of the Service the investigations were confined largely to a study of the general meteorological conditions of the State. Numerous stations were established in the different counties, volunteer observers having been obtained at a sufficient number of points to render it possible to determine the more important features of the climate of the State. Throughout the same time monthly Meteorological Reports, extending through the year, and weekly Crop Bulletins, covering the growing and harvesting seasons, were published. Two biennial reports to the General Assemblies of 1894 and 1896 were also prepared and subsequently printed, with the necessary maps, diagrams and tables. A series of large Climatic Charts was also published and placed on exhibition in the Maryland Building in Chicago at the time of the Columbian Exposition, and copies of the same were subsequently distributed.

During the past few months an entire reorganization of the work of the Maryland State Weather Service has been perfected. It has seemed desirable to transfer the accumulation of general meteorological data to the Climate and Crop Service of the Weather Bureau, which is much more fully equipped for the carrying on of that phase of the work, and to devote the money and energies of the Maryland State Weather Service to the study of special problems connected with the climatology of the State. It is possible, by cooperation with the State Geological Sur-
vey, the State Agricultural institutions, and the Department of Agriculture at Washington, to take up lines of research that will be of much value to the people of Maryland, and it is proposed in the immediate future to begin the following investigations:

First. A study of special meteorological conditions, e.g., the influence of the Chesapeake Bay and the Atlantic Ocean upon the temperature of the adjacent land areas.

Second. A study of the agricultural soils of Maryland in relation to geology and climate.

Third. A study of the hydrography of the State, especially as regards the relation of rainfall to discharge and to soil conditions.

Fourth. A study of the forestry conditions of Maryland and the relation of forest growth to climate and geology.

These and various other lines of work open up a field for investigation which has been but little undertaken hitherto.

Cooperation has been secured for this work with the institutions previously mentioned. Mr. F. J. Walz has been appointed by the Chief of the Weather Bureau in charge of the Baltimore office and stationed at the University, and as Meteorologist of the State Weather Service will have direct charge of its work. Mr. O. L. Fassig has been added to the force, and will be allowed to devote the greater portion of his time to the investigation of the special problems which have been above described. Mr. C. W. Dorsey, of the State Agricultural Experiment Station, has also been assigned to the State Weather Service, to carry on those investigations which relate more particularly to the agricultural questions involved, and will conduct his work under the supervision of Professor Whitney, of the U. S. Dept. of Agriculture. Special plans for cooperation have likewise been made with Professor Whitney, Chief of the Division of Agricultural Soils, with Professor Fernow, Chief of the Division of Forestry of the U. S. Dept. of Agriculture, and with Professor Newell, of the Division of Hydrography of the U. S. Dept. of the Interior, by which preliminary surveys will be at once inaugurated throughout the State. These gentlemen will cooperate with the members of the State Geological Survey in the prosecution of their investigations.

It is proposed at the same time to establish a new series of publications which shall conform in all particulars with those already adopted for the State Geological Survey. These publications will contain the results of the special investigations and from time to time summaries and discussions of the data collected by the Climate and Crop Service of the Weather Bureau. It is not intended in these publications to duplicate the extensive tabular matter published by the National Bureau. The Commission in charge of the State Weather Service think that the presentation of the results of the general and special
investigations in a readable form will meet the requirements of those who are seeking information regarding the climatic conditions of Maryland.

It is to be hoped, with the increased facilities and superior training of the men who have been assigned to this work, that the Maryland State Weather Service may prove of far greater value to the people of the State of Maryland than in the past. The work of the Maryland State Weather Service has from the first been favorably received, but the future must commend it still more highly to the consideration of the public.

Wm. Bullock Clark,
State Geologist and Director State Weather Service.
REPORT CONCERNING THE AMERICAN SCHOOL OF CLASSICAL STUDIES IN ROME.

TO THE PRESIDENT OF THE JOHNS HOPKINS UNIVERSITY:

I submit, at your request, the following report of my work as Director of the American School of Classical Studies in Rome, during the year 1896-97, for which period I was granted by the Trustees leave of absence from the University.

The School entered upon the second year of its existence in new quarters, having leased for its purposes a commodious dwelling known as the Villa Story, on the corner of the Via Gaeta and the Via Palestro, not far from the Baths of Diocletian. The number of regular students in attendance during the year was nine, coming from the following institutions: Johns Hopkins (2), Michigan, Princeton, University of Missouri, Columbia, De Pauw, Yale, and Williams. Mr. Gordon J. Laing, who took his Ph. D. degree in this University in 1896, had been appointed a Fellow in the School, and Mr. Charles Hoeing, who had obtained a Fellowship in the Johns Hopkins for the year 1896-97, was allowed to spend the year in Rome. Both of these gentlemen proved extremely helpful to me in my work. Two young ladies were admitted as special students, taking lectures in the Department of Archaeology, under Professor Allan Marquand, of Princeton, who was associated with me in carrying on the work of the School. He lectured twice a week, from November until April, on Etruscan, Roman and Early Christian Art, and I lectured most of the time from the 15th of October, the official date set for the opening of the School, until April, three times a week, on Palæography and Epigraphy. The students, under my direction, devoted much attention to work upon manuscripts in the Vatican, and upon inscriptions to be found in the various galleries and museums in Rome. Some of the results of their work will appear in papers to be published in the American Journal of Archaeology. My own special work was largely concerned with Manuscripts of Terence, at first in Rome, and afterward in Florence, Venice, Milan, Paris, and Oxford.
To give a better idea of the work of the School, I may perhaps add that the students received courses of instruction also from Professor Hülsen, of the German Archaeological Institute, in the Topography of Rome; from Professor Stevenson, Curator of Coins in the Vatican, on Numismatics; from Professor Marucchi, on the Catacombs; and from Professor Loewy, of the University of Rome, on Greek Art. They also made numerous excursions to points in the vicinity of Rome having a special historical or archaeological interest, and in May they spent nearly two weeks in Pompeii and Naples, under the skillful guidance of Professor Mau, the recognized authority upon Pompeii. The usual excursion to Greece and the islands, under the direction of Professor Dörpfeld, had to be abandoned this year on account of the war in Greece.

The year, on the whole, was, I think, a prosperous one for the School, and the interest of the students in classical studies was greatly quickened by the intimate acquaintance gained with the antiquities of Rome and Pompeii, and with the old manuscripts and inscriptions. Owing to the unwillingness of the Italian Government to grant concessions to foreign schools, no excavations were undertaken, but the School will, nevertheless, be able to publish some sixty Latin inscriptions, not hitherto edited.

For myself, I believe that the year spent in Rome, the city lying closest to all my studies, was of inestimable value, and I have to thank the Trustees of the University for the great privileges thus afforded me.

MINTON WARREN.

December 1, 1897.
ABSTRACT OF THE REPORT OF THE
LIBRARIAN.

The number of bound volumes in the Library is 82,527. The accessions during the year have been 2601. Of the volumes so added, 1438 were received by gift or exchange. The number of pamphlets and unbound volumes received during the year exceeded 2000. The total number of pamphlets in the Library exceeds 60,000. Over 1000 serials are regularly received.

A full list of gifts to the Library is appended. The more important donations have been:

From two ladies of Baltimore, fifty dollars, which have been expended in the purchase of works in Political Science.

From Mr. Julian Le Roy White, a set of the publications of M. Brunetière.

From the United States Venezuelan Commission, a set of their Reports.

From President Gilman, one hundred and seventy-three volumes and pamphlets, many of which relate to American Biography.

From Professor Remsen, thirty-one volumes on Chemistry.

From Mr. George H. Coursen, fifty-eight volumes, chiefly relating to Engineering.


From the Duc de Loubat, a copy of a reproduction of Codex Vaticanus 3773 (MSS. of Anáhuac), and the first part of Hamy's Choix de Pièces Archéologiques.

From Princeton University, a copy of the medal struck on the occasion of the sesqui-centennial celebration of the College of New Jersey.

From the Bavarian Academy, twenty-one volumes of its publications.

From the National Antiquarian Society of France, twenty-four volumes of its Memoirs and Bulletins.

From the Toulouse Faculty of Sciences, a complete set of its Annals, in ten volumes.

From the Hungarian Academy, the first volume of Bolyai's Tentamen.
From the Lick Observatory (through Professor Holden), its Atlas of the Moon.
From the New York Historical Society, a full set of their publications.
From the Baltimore City Library, one hundred and forty-eight volumes of official publications.
From the Peabody Institute, two copies of the volumes of its Second Catalogue.
From the Gorham Manufacturing Company, gelatine prints of medals representing the sovereigns of France.
From Henry Holt & Company, their publications for the year.
From universities here and abroad, academic publications for the year.

In addition to the above, gifts of value have been received from Professor Alexander Agassiz, Professor H. B. Adams, the Asiatic Society of Bengal, the American Oriental Society, the American Society in London, the University of Athens, Dr. H. G. Beyer, the Royal Library of Berlin, the Biological Students of the University (1897), the Bodleian Library, the Rev. R. R. Booth, the Cambridge University Press, Dr. S. C. Chandler, Dr. J. B. Crozier, the Hon. J. L. M. Curry, Alfred R. Conkling, Prince Alfonso Doria Pamphili, Professor Gildersleeve, J. W. Gordon, Hon. A. P. Gorman, Dr. Samuel A. Green, Harvard College Library, Harvard Observatory, the Government of India, the Italian Ministers of Agriculture and of Public Instruction, the Italian Bureau of Statistics, the Museo de La Plata, the Manchester Geographical Society, Hon. W. W. McIntyre, the Maryland Geological Survey, the Maryland Historical Society, the Prince of Monaco, the New York State Library, the Minister of Education of Ontario, Professor H. F. Osborn, Professor E. B. Poulton, the Royal Historical Society, the National Institute of Santiago, the Swedish Academy, Dr. Kirby F. Smith, Dr. T. J. J. See, the University of Upsala, the Republic of Uruguay, Dr. J. Vallot, Dr. C. K. Winne, Mr. Robert C. Winthrop, Jr., and the Yale University Library.

The purchases of the year have been generally limited to books required for the work in progress in the various departments. A considerable number of volumes have been added in Greek, Latin, Sanskrit, German, Biology, and Chemistry, at the request of the heads of those departments.

The staff of the General Library consists of Mr. Brandow, in charge of the general reading room, Mr. Miller, in charge of the stack rooms, the periodicals, etc., a lady in charge of the study room and of cataloguing, and a boy attendant.

The Classical Library has been in charge of Dr. C. W. E. Miller, under the supervision of Professor Gildersleeve.

The Modern Language collection has been in charge of Mr. Prettyman and a library attendant, under the supervision of Professor Wood.
The Historical collection has been in charge of Miss Daran, under the direction of Professor Adams and Dr. Vincent.

The Chemical library has been in charge of Dr. Gilpin, under the direction of Professor Remsen.

The Biological library has been in charge of Mr. D. S. Johnson and a library attendant, under the direction of Professor Brooks.

The Geological library has been in charge of Dr. Mathews, under the supervision of Professor Brooks.

The Medical library has been in charge of Miss Thies, under the supervision of Professor Hurd.

The Astronomical library has been in charge of Mr. S. V. Hoffman.

The Physical and Mathematical Seminary collection has been under the supervision of Dr. Ames.

Detailed statements of expenditures for the library have been submitted separately.

During the year the New Book Department has purchased 4200 volumes, of the estimated value of $6500. Since the opening of this department, 90,000 volumes, of the estimated value of $140,000, have been exhibited on its shelves.

N. Murray.

1897, November 1.

ABSTRACT OF THE REPORT OF THE JOHNS HOPKINS PRESS.

The several regular journals issued here have been continued during the year as follows:

The first volume of the Journal of Experimental Medicine, edited by Professor Welch, has been completed. It includes 728 pages, large octavo, with 36 plates and 17 figures. It contains 33 separate papers, embodying reports of researches carried on in the scientific laboratories of Boston, New York, Philadelphia, Baltimore, Ann Arbor, Chicago, Montreal, etc. Five numbers of volume two have also appeared. These contain 606 pages and 43 plates.

Volume nineteen of the American Journal of Mathematics, edited by Professor Craig, with the co-operation of Professor Newcomb, has been completed. It contains 388 pages, quarto. The series of portraits of distinguished mathematicians was continued in this volume with a portrait of Professor Fuchs.
Of the American Chemical Journal, edited by Professor Remsen, numbers seven to ten, completing volume eighteen, and one to eight of volume nineteen, have appeared. These contain 1066 pages, octavo.

Of the American Journal of Philology, edited by Professor Gilder-sleeve, numbers three and four of volume seventeen and one and two of volume eighteen have been issued. These include 540 pages, octavo.

Of the Studies in Historical and Political Science, edited by Professor Adams, numbers nine to twelve of the fourteenth series and numbers one to nine of the fifteenth series have appeared. These numbers contain 630 pages, octavo. Extra volume sixteen: Contemporary American Opinion on the French Revolution, by Dr. Charles D. Hazen (325 pages, octavo) has just been published.

Of the Modern Language Notes, edited by Professor Elliott, numbers six to twelve of volume twelve and one to six of volume thirteen have been issued. These contain 292 pages, quarto.

Of the Contributions to Assyriology, edited by Professor Haupt, part three of volume three (108 pages, octavo) was issued last autumn.

Numbers 127 to 131 of the University Circulars (including 78 pages, quarto) have appeared during the year.

The Twenty-First Annual Report of the President was issued in December, 1896, and the Annual Register in May, 1897.

Of the Johns Hopkins Hospital Reports volume six (424 pages, octavo, and 79 plates) has been issued, and of the Hospital Bulletins four numbers, completing volume seven, and ten numbers of volume eight (242 pages, quarto, with numerous illustrations) have been issued. The Bulletins are now appearing monthly, throughout the year.

Of the series of the Hebrew (Polychrome) Text of the Old Testament, edited by Professor Haupt, the following parts have been issued since the last report: Genesis, by Professor C. J. Ball, of London, and Daniel, by Professor A. Kamphausen, of Bonn. Nine parts in all of the edition are now ready. Of the édition de luxe eight parts have been issued.

There have been received, in accordance with the regulations, one hundred and fifty copies of the theses accepted for the degree of Doctor of Philosophy from the graduates named below:

Arnold, B. W.—History of the Tobacco Industry in Virginia from 1860 to 1894.
Baker, T. S.—Lenau and Young Germany in America.
Gallaway, W. F.—On the use of MH with the Participle in Classical Greek.

Kinard, J. P.—A Study of Wolfstan’s Homilies: Their style and sources.
Mackay, E.—A Contribution to the Study of Double Salts in Water Solution.
Norris, J. F.—Some Double Salts containing Selenium.
Norris, R. S.—Paranitroorthotolylphenylsulphone and Some of its Derivatives.
Pessels, C.—The Present and Past Periphrastic Tenses in Anglo-Saxon.
Rutter, F. R.—The South American Trade of Baltimore.
Smith, G. O.—The Geology of the Fox Islands, Maine.
Vos, B. J.—The Diction and Rime-Technic of Hartmann von Aue.
The system of exchanges has been conducted as in previous years.

N. Murray.
GIFTS TO THE LIBRARY.

ADAMS, PROF. C. K. Present Obligations of the Scholar. Madison, 1897. O.

ADAMS, PROF. H. B. Studies in Secondary Education. London, 1892. D.


ADLER, DR. C. (Author). The International Catalogue of Scientific Literature. 1897. O.


ALGIER, UNIVERSITY OF. Two Academic Publications.

AMERICAN CONFERENCE ON INTERNATIONAL ARBITRATION. Proceedings. New York, 1896. Q.


AMERICAN SOCIETY IN LONDON. Volume commemorating Thanksgiving Day. 1896. D.

ANTIQUITY COLLEGE. The Horace Mann Centenary, 1796-1896. O.

ASIATIC SOCIETY OF BENGAL. The Aitareya Aranyakasha. Calcutta, 1875-6. O.

ATHENS, UNIVERSITY OF. Three Academic Publications.


AUSTRALIA: DEPARTMENT OF MINES. Publications for the year.


BAKER, M. Directory of the Scientific Societies of Washington. 1897. O.

BALTIMORE CITY LIBRARY (G. W. McCready, Librarian). One hundred and fifty-eight volumes of municipal publications of the City of Baltimore.


Two other of his recent publications.


BERLIN, ROYAL LIBRARY OF. Verzeichniss der an den deutschen Universitäten erschienenen Schriften, etc. 4 vols. Berlin, 1896. O.

BERLIN, UNIVERSITY OF. Two hundred and fifty-one Academic Publications.

BESANÇON, UNIVERSITY OF. Two Academic Publications.

BIOLOGICAL STUDENTS OF THE UNIVERSITY. Portraits of the Contributors to the Challenger Expedition Reports. London, 1897. F.

BODINE, J. M. (Author). The Standard of Medical Education. Louisville, 1897. D.

BODLEIAN LIBRARY. Eleven Oxford Prize Essays.

Anecdota Oxoniensia. Aryan Series VII. Oxford, 1897. O.
Gifts to the Library.

BONN, UNIVERSITY OF. Ninety-two Academic Publications.

BOOTH, REV. R. R. Reminiscences of William A. Booth, 1805-1895. Q.

BOURDEAUX, UNIVERSITY OF. One hundred and thirty-one Academic Publications.

BRIGHT, PROF. J. W. Macdonald, G. England's Antiphon. D.

Kent, C. W. Shakespeare Note Book. Boston, 1897. Q.


BRUSSELS: SOCIÉTÉ D'ARCHÉOLOGIE. Annaire for 1897.

BRYN MAWR COLLEGE. Bartlett, H. Metrical Division of the Paris Psalter. Baltimore, 1896. O.

Gentry, F. Forms of Plane Quartic Curves. New York, 1896. O.

BUCHERER, DR. A. H. (Author). Eine Kritik der Nernst'schen thermodynamischen Anachauungen. Freiburg, 1897. O.

CAEN, UNIVERSITY OF. Thirteen Academic Publications.

CALLAHAN, DR. J. M. Chicago Board of Trade Reports for 1895-96. 6 vols.


CHRIST CHURCH HISTORICAL ASSOCIATION (Philadelphia). Memorial of the Two Hundredth Anniversary of the Founding of Christ Church. Philadelphia, 1896. O.

CINCINNATI OF MARYLAND, SOCIETY OF. Register, 1897. Q.

CLERMONT-PERRAND, UNIVERSITY OF. Five Academic Publications.


CLUB OF ODD VOLUMES (Boston). Catalogue of the Tenth Anniversary Exhibition. Boston, 1897. O.


CORNELL UNIVERSITY LIBRARY. Academic Publications for the year.

COURSEN, G. H. Fifty-eight volumes, principally on Engineering.

COWPENS CENTENNIAL COMMITTEE. Proceedings at the Unveiling of the Battle Monument in Spartanburg, S. C. Charleston, 1896. O.


CURRIER, DR. A. F. Two of his recent publications.

CUT, DR. E. N. Poems. 6d series. Hertford, 1897. D.

DARNEY, PROF. C. W., JR. Two of his recent publications.

DA COSTA, DR. J. M. (Author). Address, at the opening of Garrett Memorial Building. Pennsylvania Hospital, 1897. O.

DARAPSKY, DR. L. Four of his recent publications.


Contemporary Criticisms of Home Rule Speeches. Cambridge. O.

DEWEY, PROF. D. R. Addresses delivered at the University of Vermont, Founders' Day, May 1, 1897. Burlington, 1897. O.

DIJON, UNIVERSITY OF. Eight Academic Publications.

DU CHASTEL, O. Coup Manqué. Paris, 1897. D.
Gifts to the Library.


EASTMAN, DR. C. R. Two of his recent publications.

EDINBURGH: ROYAL COLLEGE OF PHYSICIANS. Reports from the Laboratory. Vol. VI. Edinburgh, 1897. O.


Facsimile des textes de trois corps. 2nd ed. Foix, 1893. O.


FIELD COLUMBIAN MUSEUM. Four publications of the Museum. Chicago, 1896-7. O.


FRANCE, UNIVERSITY OF. Ninety-nine Academic Publications.

FRAZER, DR. P. Edward Drinker Cope: in Memoriam, 1840-97. O.

FREIBURG, UNIVERSITY OF. Ninety-three Academic Publications.

FRIEDENWALD, DR. H. Two of his recent publications.

GARNETT, DR. J. M. (Editor). Hayne's Speech to which Webster Replied. New York, 1894. S.

GATSCHET, DR. A. S. Four of his recent publications.

GERMANS IN MARYLAND, SOCIETY FOR THE HISTORY OF. Annual Reports, 1894-6. O.

GILDERLEIGH, PROF. B. L. Russell, F. W. The School of Plato. London, 1896. O.


GILMAN, PRES. D. C. One hundred and seventy miscellaneous volumes.

GILPIN, DR. J. E. Genealogy of the Family of Gideon Gilpin. Baltimore, 1897. F.

GIRARD COLLEGE. Unveiling of the Statue of Stephen Girard. Philadelphia, 1897. O.


GORDON, J. W. Declaration concerning the matter of Bounty, King James I, 1610. Facsimile reprint, 1897. O.

GORGAN MANUFACTURING COMPANY. A Series of Gelatine Prints representing the Sovereigns of France from Pharamond to Louis Philippe. Providence, 1896. F.


GREEN, DR. S. A. Six bound volumes and thirty-seven pamphlets, mainly relating to Massachusetts History.

GRIFFISWALD, UNIVERSITY OF. One hundred and thirty-four Academic Publications.

GRENJOLE, UNIVERSITY OF. Eight Academic Publications.

GRIFFITH, G. S. (Author). Prison Systems of the South. O.


HALE, DR. J. P. (Author). History and Mystery of the Kanawha Valley. Charleston, 1897. O.

HALL, UNIVERSITY OF. One hundred and four Academic Publications.

HARPER, I. O. Geologic Atlas of the United States (Washington, 1894), and other Maps.

HARVARD COLLEGE ASTRONOMICAL OBSERVATORY. Annals. 6 vols. Cambridge, 1896-7, and six other publications. Q.

HAUPTVOGEL, M. Das grosse Geheimnis. Gotha, 1896. O.


HEIDELBERG, UNIVERSITY OF. One hundred and twenty-two Academic Publications.

HOAR, HON. G. F. The Charge of Packing the Court against President Grant and Attorney General Hoar Refuted. Worcester (Mass.), 1896. O.


Gifts to the Library.

HOLT (H.) & Co. (Publishers). Their publications for the year.

HUNGARIAN ACADEMY OF SCIENCES. Bolyal, Tentamen. I. Budapestinethi, 1897. O.


HOWLEY, Rt. REV. BISHOP. (Author). Cabot's Voyages. 1897. O.

ILLINOIS STATE LABORATORY OF NATURAL HISTORY. Biennial Report. Chicago, 1897. O.

INDIA, GOVERNMENT OF. Crooke. Tribes and Castes. 4 vols. O.

INDIANA GEOLOGICAL SURVEY. Annual Report, 1896. Indianapolis, 1897. O.

IOWA GEOLOGICAL SURVEY. Report for the year. Des Moines, 1897. Q.


Atlante illustrativo, etc. Florence, 1897. O.

JANET, C. Four of his recent publications.

JOHNSTON, DR. C. (Author). Epistolary Literature of the Assyrians, etc. 1897. O.

KERNTLER, F. (Author). Die elektrodynamischen Grundgesetze. Budapest, 1897. O.

KIEL UNIVERSITY. One hundred and thirty Academic Publications.

KÖNIGSBERG, UNIVERSITY OF. Fifty Academic Publications.

LAGRÉSILLE, H. (Author). Quel est le point de vue le plus complet du monde. Paris, 1897. D.


LEICESTER, G. V. Smyth, P. Our Inheritance in the Great Pyramid. London, 1897. O.

Beckett, Sir E. Clocks and Watches and Bells. London, 1885. D.


LEIPSIC, UNIVERSITY OF. One hundred and forty-three Academic Publications.

LEISAGE, F. Crawford, T. C. C. La vie Anglaise. Paris, 1889. D.


LEYDEN, UNIVERSITY OF. Six Academic Publications.

Catalogue raisonné des livres et des manuscrits japonais.

LICK OBSERVATORY. Plates 2-5 of its Atlas of the Moon.

LILIE, UNIVERSITY OF. Sixty-one Academic Publications.

LLOYD, C. G. Ten Photogravures of American Fungi.

LOUBAT, DUC DE. A reproduction of Codex Vaticanus 3773 (The Manuscripts of Ana-
huc).

Pièces archéologiques de la Galerie Américaine du Musée d'Ethnographie du
Trocadéro, I. Paris, 1897. P.

LUND, UNIVERSITY OF. Twenty-three Academic Publications.

History of the University, 1872-97. Lund, 1897. Q.

LYONS, UNIVERSITY OF. One hundred and ninety-four Academic Publications.

MARSEILLES, UNIVERSITY OF. Eleven Academic Publications.

MARYLAND GEOLOGICAL SURVEY. REPORTS. Vol. I. Baltimore, 1897. O.

MARYLAND HISTORICAL SOCIETY. Archives of Maryland. 1 vol. Baltimore, 1896. O.

Massachusetts General Hospital. The Semi-Centennial of Anesthesia. Boston, 1897. Q.


MERCER, H. C. Three of his recent publications.

MERION FRIENDS' MEETING HOUSE. Bi-Centennial Anniversary. Philadelphia, 1895.

MICHIGAN BUREAU OF LABOR AND INDUSTRIAL STATISTICS. Annual Reports. 2 vols.

MICHIGAN STATE LIBRARY. Michigan Pioneer and Historical Collections. 2 vols.

Gifts to the Library.

MISSOURI BOTANICAL GARDEN (Prof. W. Trelkase). Eighth Annual Report. St. Louis, 1897. O.
MISSOURI GEOLOGICAL SURVEY. Reports. Vol. IX. Jefferson City, 1896. O.
MONTAUBAN, UNIVERSITY OF. Twenty-three Academic Publications.
MONTPELLIER, UNIVERSITY OF. One hundred and three Academic Publications.
MORSE, E. S. (Author). On the so-called Bow-Pullers of Antiquity. Salem, 1894. O.
Korean Interviews. O.
MOURE, DE. E. J. (Author). Traitément de l'ozone. Bordeaux, 1897. O.
MUNICH ACADEMY. Twenty-one volumes of its Publications.
MÜNSTER, UNIVERSITY OF. Fourteen Academic Publications.
MURGUIANDO, P. DE. Six volumes of publications relating to Uruguay.
MURRAY, DR. D. Geerts, A. J. C. Les produits de la nature Japonaise et Chinoise.
*Yokohama, 1878. O.
Treaties and Conventions between the Empire of Japan and other Powers. 1884.
MUSÉE SOCIAL (Paris). Their publications for the year.
NANCY, UNIVERSITY OF. Forty-four Academic Publications.
NAPLES ROYAL OBSERVATORY. Sulla data del Viaggio Dantesco. Naples, 1897. O.
NASHVILLE, UNIVERSITY OF. Memorial Services, Eben S. Stearns, April 12, 1897.
NEW HAVEN COLONY HISTORICAL SOCIETY. Papers. Vol. V. New Haven, 1894. O.
NEW JERSEY GEOLOGICAL SURVEY. Report for 1896.
NEW JERSEY STATE LIBRARY. New Jersey Archives. Vol. XIX. Paterson, 1897. O.
NEWMAN, K. Two of his recent publications. Santiago de Chile, 1896-7.
NEW YORK; COMMISSIONERS OF STATUTORY REVISION. The Colonial Laws of New York, 1664-1775. 5 vols. Albany, 1897. O.
NEW YORK HISTORICAL SOCIETY. Collections, 1874-92. 18 vols. New York, 1875-92. O.
NEW YORK PUBLIC LIBRARY. Bulletins for the year.
NEW YORK STATE LIBRARY. Publications of the State for the year.
NEW SOUTH WALES GEOLOGICAL SURVEY. Annual Report. Sydney, 1897. F.
NOBLE, DR. CHARLES P. Eight of his recent publications.
NORWEGIAN ACADEMY. Skrifter, 1894-5. Trondhjem, 1895-6. O.
NORWEGIAN NORTH ATLANTIC EXPEDITION. Protophyta, by H. H. Gran. Christiania, 1897. F.
ORA (Spain), COLLEGIO DE JESUS. Observaciones Meteorologicas. Oña, 1897. O.
OUTKERRIDGE, A. E., JR. (Author). The Future of American Industries. O.
PARIS; OBSERVATORY OF PHYSICAL ASTRONOMY. Annales de l'Observatoire de Meudon. I. Paris, 1866. Q.
PARIS, UNIVERSITY OF. Six hundred and twenty-five Academic Publications.
PARKMAN CLUB. Five Publications.
PEABODY INSTITUTE. Second Catalogue. Vols. I and II. Baltimore, 1897. O.
PENNSYLVANIA, UNIVERSITY OF. Publications for the year.
PENNSYLVANIA GERMAN SOCIETY. Proceedings and Addresses. Vol. VII. 1897. O.
Gifts to the Library.


POTRINE, UNIVERSITY OF. Five Academic Publications.


PREISS, E. C. Cuba unter Spanischer Regierung. N.Y., 1897. O.

PRINCETON UNIVERSITY, TRUSTEES OF. A copy of the Medal struck on the occasion of the Sesqui-centennial of the College of New Jersey.


RAVENEN, H. A. Nederlandsche Vereeniging voor Electrootechnik, 1895-96. 's Gravenhage. O.


REMSSEN, PROF. I. Twenty-one volumes of Chemical Publications.

Rennes, University of. Ten Academic Publications.


Royal Historical Society. Transactions, etc. 5 vols. London, 1896-97. O.

SABIN, H. (Author). Three Addresses. Des Moines, 1897. O.

ST. LOUIS, MAYOR OF (Hon. C. P. WALBRIDGE). Mayor's Message. St. Louis, 1897. O.

ST. PETERSBURG, UNIVERSITY OF. Fourteen Academic Publications.


SANTIAGO DE CHILE: NATIONAL INSTITUTE. Biblioteca Peruana. 2 parts. Santiago, 1896. Q.


SELLERS, E. J. The Jaudon Family. Philadelphia, 1890. Q.

SETH, A. L. Harvey, W. H. Coin's Financial School up to date. Chicago, 1895. D.

SHERARD, HON. J. E. Illustrated Hand-book to the Museum, etc. Melbourne. Q.

SERRA CLUB. Publications of the year. San Francisco, 1897. O.


SMITH, DR. K. F. Six miscellaneous volumes.

SPENCE, W. W. The American Review, 1845-50. 12 vols. O.-

Philosophical and Literary Essays by Dr. James Gregory, of Edinburgh. 1792.

2 vols. O.

MORSE, J. The American Geography, 1792. O.

The Index or Abridgement of the Acts of Parliament and Convention of Scotland. 1424-1707. S.

The volumes of the Jesuit Relations published during the year.


STEWART, J. P. Overlooked Pages of Reaper History. Chicago, 1897. O.

STONE, W. F., JR. Questions on the Philosophy of Art. London, 1897. O.

STOKES, DR. R. S. Motives to Missionary Work. 1896. D.

STRASBURG, UNIVERSITY OF. One hundred and fifteen Academic Publications.

STUTTGART KGL. NATURALIEN-KABINET. Mittheilungen. Jena, 1896. O.


THOMAS, DOUGLAS H. John Hanson, President of the U. S. in Congress assembled. Baltimore, 1897. O.

Gifts to the Library.

TOULOUSE, UNIVERSITY OF. Annales. 10 vols. Paris. Q.


TURINGEN, UNIVERSITY OF. Fifty-eight Academic Publications.

TURNBULL, MRS. L. (Author). Modern Need of the Ideal. 1896. D.

TYRELL, J. B. Eight of his publications. O and Q.

UNION LEAGUE CLUB (Chicago). Exercises on Washington's Birthday, 1897. O.

UNIVERSITY CLUB (New York). Two publications. 1897. O.

UESALA, UNIVERSITY OP. Thirty-six Academic Publications.

Zoologiska Studier; Festskrift Wilhelm Lilljeborg tillegnad. Upsala, 1896. F.

UTRICHT, UNIVERSITY OP. Fifty-nine Academic Publications.

VAILATI, DR. G. (Author). Ricerche relative alla Storta delle Scienze. Torino, 1897. O.

VALENTINE, J. J. (Author). Money, the Silver Question, etc. San Francisco. O.


VENEZUELA BOUNDARY COMMISSION (through President Gilman). A complete set of the publications of the Commission [I, Historical; II, Extracts from Archives; III, Geographical; IV, Atlas; V, VI, British Blue Books; VII, Official History, IX, Venezuela Brief; Letters of Professor Burr]. 10 vols. 1896-7. O, Q, and F.

VERMONT HISTORICAL SOCIETY. Proceedings. Montpelier, 1896. O.

VERMONT STATE LIBRARY. State Publications. 1895-6. D and O.

VICTORIA (Australia): DEPARTMENT OF MINES. Publications.

WAGGONER, M. E. Two of his recent publications.

WAPPENHANS, DR. F. Wissenschaftliche Beihelte zur Zeitschrift des allgemeinen deutschen Sprachvereins, Nos. 1-5. O.

WARREN, DR. J. C. (Author). Influence of Anesthesia on Surgery. 1897. O.

WESTERN RESERVE HISTORICAL SOCIETY. Wright, G. F. Memorial of Charles Cadece Baldwin. 1896. O.

WHITE, JULIAN LE ROY. Complete set of the works of Professor Brunetière. 21 vols. Paris, 1893-7. D.

Daudet, A. La Belle-nivernaise. Paris. S.


SPEED, J. A Prospect of the Most Famous Parts of the World. London, 1637. F.


WINTHROP, R. C., JR. Evidences of the Winthrops of Groton, etc. 1894-5. Q.

Memoirs of Robert C. Winthrop. Boston, 1897. O.

WISCONSIN STATE HISTORICAL SOCIETY. Proceedings, 1896. Madison, 1897. O.

WÜRZBURG, UNIVERSITY OP. One hundred and seventy-eight Academic Publications.

Reports and other current publications have been received from the societies and institutions named below. This does not include catalogues, reports, etc., received in regular exchange.

American Association for the Advancement of Science; American Bar Association; American Bible Society; American Board of Commissioners of Foreign Missions; American Climatological Association; American Forestry Association; American Humane Association; American Institute of Mining Engineers; American Orthopedic Association; Baltimore Boys' Home; Baltimore Chamber of Commerce; Baltimore Commissioners of Public Schools; Baltimore Health Department; Boston Board of Overseers of the Poor; Boston City Hospital; Boston Merchants' Association; Boston Museum of Fine Arts; Boston Public Library; Bowdoin College; Brooklyn Board of Education; Brooklyn Library; Brown University; Buffalo Common Council; Buffalo Library; California Bureau of Highways; California State Insane Asylum; California
Gifts to the Library.

State Mining Bureau; California, University of; Cambridge (Eng.) University Library; Cambridge (Mass.) Public Library; Chicago Academy of Sciences; Chicago Civil Service Commission; Cincinnati Museum Association; Cincinnati Public Library; Colorado Scientific Society; Colorado State School of Mines; Columbia Institution for the Deaf and Dumb; Columbus Public School Library; Connecticut Agricultural Experiment Station; Connecticut Bureau of Labor Statistics; District of Columbia Health Officer; Enoch Pratt Free Library; Florida Superintendent of Public Instruction; Forbes Library; Georgia University Engineering Society; Hebrew Technical Institute (New York); Home for Aged Jews (Chicago); Illinois Bureau of Labor Statistics; Indian Rights Association; Indiana State Medical Society; Iowa Academy of Sciences; Jersey City Free Public Library; Jewish Hospital Association (Philadelphia); Johns Hopkins Club of New England; Kansas Board of Railroad Commissioners; Kansas State Historical Society; Liverpool Public Libraries; Los Angeles Public Library; Maine Forest Commissioner; Maine Superintendent of Public Schools; Maryland Comptroller of the Treasury; Maryland Hospital for the Insane; Maryland Insurance Commissioner; Massachusetts Agricultural College; Massachusetts Board of Education; Massachusetts Board of Railroad Commissioners; Massachusetts Gas and Electric Light Commissioners; Melbourne, University of; Metropolitan Museum of Art (New York); Metropolitan Water Board (Boston); Michigan, University of; Milwaukee, Board of City Service Commissioners; Minneapolis Board of Park Commissioners; Minnesota Historical Society; National Civil Service Reform League; Newark Free Public Library; New Bedford Free Public Library; New England Society in the City of Brooklyn; New Jersey State Library; Newton Free Library; New York Mercantile Library; New York Meteorological Observatory; New York Public Library; New York Reform Club; New York Society of Mechanics and Tradesmen; New York State Bureau of Statistics of Labor; New York State Charities Aid Association; New York State Commission in Lunacy; New York State University; North Carolina Agricultural Experiment Station; North Carolina Board of Public Charities; Northwestern University; Oberlin College Library; Ohio Board of State Charities; Ohio State Archaeological and Historical Society; Ontario Bureau of Industries; Ontario Department of Agriculture; Ontario Registrar General; Peabody Institute; Peabody Museum (Cambridge); Perkins Institution; Philadelphia College of Physicians; Philadelphia Mercantile Library; Portland Society of Natural History; Philadelphia College of Physicians; Providence Athenaeum; Providence Public Library; Reynolds Library; Rhode Island Commissioner of Industrial Statistics; St. Louis Free Public Library; St. Louis Mercantile Library; Salem Public Library; San Francisco Board of Supervisors; San Francisco Free Public Library; Syracuse Central Library; Tennessee Bureau of Labor Statistics and Mines; Texas Academy of Science; Tompkins Grammar School; Toronto, University of; Trinity College; Utah, University of; Utica State Hospital; Williams College Library; Wisconsin Bureau of Labor Statistics; Wisconsin State Treasurer; Worcester Free Public Library.

The University is indebted, as in previous years, for many and valuable gifts from the several governmental departments in Washington.
REPORT OF THE DEAN OF THE MEDICAL SCHOOL.

To the President of the University:

Sir:—In compliance with your request, I submit, as Dean of the Medical School, this first report upon its organization and its development up to the graduation of the first class.

At the time of the opening of the Medical School, in October, 1893, the Medical Faculty consisted of the President, nine professors, and six associates, and the entering class of students numbered eighteen. The School began with only the first year of the course fully organized. With each of the four years of the School's existence there has been a steady increase in the number of students, those admitted the last year numbering forty-two, and the total number of those studying for the degree of Doctor of Medicine being one hundred and twenty-three. Of these, twenty-nine were residents of Maryland, and ninety-four came from other States of the Union and from Canada. The Faculty of Medicine during the year numbered, in addition to the President, ten professors, four clinical professors, four associate professors, two lecturers, and twenty associates, instructors, and assistants, making a total of forty-one. Since 1893, the courses of instruction for each year have been successively added, so that only during the past year was the organization of the entire four years' course completed. At the graduating exercises of the University, held in June last, the degree of Doctor of Medicine was conferred, for the first time, upon fifteen candidates who had satisfactorily completed the four years' course of study of Medicine. Of these graduates, one was appointed Assistant in Anatomy, one Fellow in Pathology, and the remaining thirteen received appointments upon the house staff of the Johns Hopkins Hospital, one, however, resigning from the last-named position.

All of the students admitted as candidates for the degree of Doctor of Medicine have been graduates of approved colleges or scientific schools, and have fulfilled the requirements as to a knowledge of French and German, and of physics, chemistry, and biology. Thirty-nine universities or colleges are represented in the list of students, the Johns Hopkins University by twenty-five and Yale University by twenty-three students.
The character of the preliminary training required for admission, necessitating a degree in arts or science, with a specified training in physics, chemistry, and biology, and a reading knowledge of French and German and acquaintance with Latin, has been found to be well suited to the high aims of the School and readily adjustable to the prevailing conditions of collegiate education in this country. It unquestionably secures students whose average fitness for the study and practice of medicine is higher than has been hitherto attained in medical schools in this country.

The courses of instruction embrace Anatomy, including Histology and Microscopic Anatomy, Physiology, Physiological Chemistry, Pharmacology and Toxicology, Pathology and Bacteriology, Hygiene, Medicine, Clinical Microscopy, Surgery, Obstetrics, Gynecology, Dermatology, Diseases of Children, Diseases of the Nervous System, Genito-Urinary Diseases, Laryngology and Rhinology, Ophthalmology and Otology, Psychiatry, Medical Zoology, Forensic Medicine, and the History of Medicine. The first two years of the course are devoted mainly to the fundamental sciences, and the latter two years to medicine, surgery, obstetrics, and the various specialties. Especial emphasis is laid upon practical work in the various laboratories, and in the dispensary and wards of the Hospital. Especially advantageous for thorough clinical training are the arrangements by which the students, divided into small groups, engage in practical work in the dispensary, and throughout the fourth year serve as clinical clerks and surgical dressers in the wards of the Hospital. At the close of the academic year, twelve members of the graduating class are selected, upon the basis of their general standing in the studies of the four years' course, for appointment as resident house officers in the Johns Hopkins Hospital, to serve for one year. In addition, the Faculty is entitled to nominate annually two physicians as assistants upon the house staff of the City Asylum at Bay View.

The various laboratories of the Medical School are accommodated as follows: the Physiological in the Biological Building of the University, the Anatomical and Pharmacological in the Women's Fund Memorial Building, erected in 1894; the Pathological and Bacteriological and the Physiological-Chemical in the Pathological Building; and the Clinical in a two-story addition to one of the Hospital buildings, for which the funds were generously contributed to the Hospital. There is urgent need, in consequence of the rapid growth of the School, of an additional building, which shall accommodate the laboratories of Physiology, Pharmacology, and Physiological Chemistry, and also need of suitable quarters for the general administration of the School.

The main part of the medical library is in the Administration Building of the Hospital, but the various special laboratories have smaller
libraries adapted to their needs. These collections of books and journals are already of great service, but they fall short of the needs of the School.

Since the opening of the Hospital, in 1889, and especially since that of the Medical School, numerous important investigations have been conducted by members of the medical staff. The results of these studies have been published in the Bulletin of the Johns Hopkins Hospital, the Johns Hopkins Hospital Reports, the Journal of Experimental Medicine, and in other journals and monographs. In all departments there has been much fruitful activity in research, which has been greatly promoted by the wise liberality of the Trustees of the Hospital and of the University in providing appropriate media for publication.

The three associations, the Hospital Medical Society, the Historical Club, and the Journal Club, which meet, one each Monday evening, in the Assembly Room of the Hospital, have been largely attended by teachers, students, and physicians from the city. These various societies exert a stimulating and educational influence and afford opportunities for communicating the results of special research and study.

Since the opening of the Hospital, in 1889, courses of instruction have been offered to graduates in medicine. The attendance upon these courses has steadily increased with each succeeding year. With the completed organization of the Medical School, it was found necessary to give these courses at a later period of the academic year than formerly. They are now given during the months of May and June, with a preliminary course in Normal Histology in April.

These graduate courses are in Pathology, Bacteriology, Clinical Microscopy, General Medicine, Surgery, Gynecology, Dermatology, Diseases of Children, Diseases of the Nervous System, Genito-Urinary Diseases, Laryngology and Rhinology, and Ophthalmology and Otology. They are open to all graduates of medicine who give evidence that they are prepared to profit by the opportunities offered. The number of physicians who took these special courses during May and June, 1897, was fifty-eight.

In addition to the students studying for the degree of Doctor of Medicine, and the physicians who took the graduate courses, eleven physicians were received as special students for the purpose of pursuing independent and original work in some of the departments of the School. Several of these special workers completed researches which have been published.

Respectfully yours,

WILLIAM H. WELCH,
Dean of the Medical School.

December 1, 1897.
THE RELIEF FUND OF 1896.
A LIST OF THE CONTRIBUTORS. (See Page 1.)

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Relief Fund of 1896.

105

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Garrett, John W. .......................................................... 10,000
Gill, John ................................................................. 5000
Gilpin, Langdon & Co. .................................................. 500
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Glenn, John M. .......................................................... 2500
Gordon, Basil B. ........................................................ 500
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Hamburger, Philip ....................................................... 500
Hoffman, R. Curzon ..................................................... 500
Homer, Charles C. ....................................................... 500
Hooper, Theodore ........................................................ 1000
Horner, Joshua ........................................................... 500
Howard, Charles M. ..................................................... 500
Hunt, German H. .......................................................... 1250
Hurst, John E. ............................................................. 1000
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Jenkins Brothers ......................................................... 1250
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Jones, T. Barton* ....................................................... 500
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Latrobe, Ferdinand C. ................................................... 250
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The Alumni of the Johns Hopkins University    $ 9233
The Alumni of Baltimore City College        2995
CONTRIBUTORS TO THE EMERGENCY FUND OF 1889.
(SEE REPORT FOR 1889.)

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The Death of Dr. James Carey Thomas.

Born in Baltimore, July 13, 1833.

Died in Baltimore, November 9, 1897.

The friends of Dr. James Carey Thomas, connected with the Johns Hopkins University, assembled Sunday afternoon, November 14, in Levering Hall, the rooms of the Young Men's Christian Association, for the purpose of giving expression to their sentiments of respect and affection. The Trustees, the Faculty, and the Students were represented.

The chair was taken by Mr. C. Morton Stewart, President of the Board of Trustees. A biographical sketch was read by Professor Wood, and the following minute, presented by President Gilman, was then adopted. In confirmation of what is there said, remarks were made by Dr. Welch, Dean of the Medical School, on the services of Dr. Thomas to medical education; by Professor Griffin, Dean of the Collegiate Department, on the religious characteristics of Dr. Thomas; by Professor Haupt, on his personal relations, and on his liberality toward those from whom he differed; and by Professor Remsen, on his philanthropic work.

Mr. Joshua Levering made the concluding remarks, in which he gave expression to the grief of the people of Baltimore not connected with the University, as well as of those within its walls, at the death which has come so unexpectedly.

The Minute, above mentioned, was presented to the Board of Trustees December 6, 1897, adopted by them, and ordered to be placed upon the records of the University.
The Death of Dr. James Carey Thomas.

MINUTE.

Dr. Thomas has been a Trustee of this University since 1870. He was the first person elected by the original Trustees to take a seat in the Board, and at the time of his death he was one of three, still members of the Board, who took part in the organization of this institution, on the death of the founder, nearly twenty-four years ago. He believed that Baltimore had then an opportunity such as had never before occurred in this country to establish a university of the highest character, which would be of service to the State, the country, and the world. Whatever tended toward the attainment of this ideal received from him unfailing encouragement.

He thoroughly appreciated the university spirit, and every endeavor to secure the advancement of higher education for men and for women, the improvement of scholarship, the promotion of research, or the calling and retention of qualified professors, was sure to have his approbation and aid.

In looking back upon his services it is impossible to say in which department of work he was most interested—the literary, the scientific, or the medical. To each in turn he gave his hearty support, but his training as a physician enabled him to render noteworthy services in the organization of the School of Medicine. In recognition of this capacity, the Trustees of the Hospital made him, as a member of the Medical Board, one of their professional advisers.

He traveled much, especially in England and the United States, and wherever he went, he came into relations with the active and intelligent promoters of advancing knowledge, and with the leaders of public opinion. He brought home their experience and suggestions. He loved flowers, music, poetry, lectures, charities, and especially the social assemblies of his friends for religious, philanthropic, or professional conference. His Christian character was always manifest, but never in a dogmatic or oppressive aspect. In the welfare of the students, especially as it is promoted by the Young Men's Christian Association, he took a lively interest.
Although he had strong convictions, which did not quickly yield to persuasion, he allowed to others the freedom of thought and action which he claimed for himself, and he acquiesced without opposition in the conclusions to which his colleagues came. His enthusiasm was never at rest. He firmly believed that whatever obstacles the University might encounter its future was assured. This cheerful courage was inspiring to the staff of teachers; it made him their welcome adviser and their constant friend.

His simple, open, hearty greetings, his cheerful smile, his ringing voice, his dislike of forms and ceremonies, and the assurance of his sympathy, will always be remembered by those who knew him; and those who come after us, never having seen his face, will share, unconscious heirs, in methods, opportunities, and advantages due, in no small measure, to his fidelity and forethought.

As we lay upon his tomb this tribute of gratitude and affection, we recall, appropriate to his memory, these words of Lord Bacon: "IT IS A HEAVEN UPON EARTH WHEN A MAN'S MIND RESTS UPON PROVIDENCE, MOVES IN CHARITY, AND TURNS UPON THE POLES OF TRUTH."

At the time of his death, Dr. Thomas rendered these services to the public. He was:

- A minister of the Society of Friends.
- A physician in general practice.
- A trustee of the Johns Hopkins University, and the chairman of the executive committee.
- A member of the medical board of the Johns Hopkins Hospital.
- A trustee of Haverford and Bryn Mawr Colleges.
- A vice-president of the Young Men's Christian Association of Baltimore, and formerly the president.
- President of the Thomas Wilson Fuel Saving Society.
- A trustee of the Thomas Wilson Sanitarium for Children.
- A vice-president of the Charity Organization Society.
- A manager of the Society for the Suppression of Vice.
- A member of the municipal commission on free baths.
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112
TWENTY-THIRD

ANNUAL REPORT

OF THE PRESIDENT OF THE

Johns Hopkins University

Baltimore, Maryland

1898

Baltimore
The Johns Hopkins Press
1898
TRUSTEES.
1898.

President:
C. MORTON STEWART.

Treasurer:
FRANCIS WHITE.

Secretary:
LEWIS N. HOPKINS.

Members of the Board:
LEWIS N. HOPKINS, FRANCIS WHITE, C. MORTON STEWART, JOSEPH P. ELLIOTT,* J. HALL PLEASANTS, ALAN P. SMITH,† JAMES L. MCLANE,
W. GRAHAM BOWDOIN, WILLIAM T. DIXON, BENJAMIN F. NEWCOMER, ARTHUR GEORGE BROWN, EUGENE LEVERING, RICHARD M. VENABLE,
The President of the University, ex officio.

COMMITTEES.

Executive Committee:
JAMES L. MCLANE, BENJAMIN F. NEWCOMER, FRANCIS WHITE, C. MORTON STEWART, ex officio.
The President of the University, ex officio.

Finance Committee:
FRANCIS WHITE, BENJAMIN F. NEWCOMER, J. HALL PLEASANTS, W. GRAHAM BOWDOIN, C. MORTON STEWART, ex officio.

Building Committee:
J. HALL PLEASANTS, JAMES L. MCLANE, C. MORTON STEWART, ex officio.

*Died January 14, 1898. †Died July 18, 1898.
REPORT.

To the Trustees of the Johns Hopkins University:—

Gentlemen:

I have the honor to present my twenty-third Annual Report as President of the Johns Hopkins University.

The bestowal of State aid upon this University is an event so significant that I defer to a later part of the Report the statistics with which it has been usual to begin.

It is well known that the continued failure of the Baltimore and Ohio Railroad to pay the customary dividend,—first upon its Common Stock, and afterwards on its Preferred Stock,—has seriously embarrassed the work here carried on. Twice the citizens of Baltimore, with great generosity, came forward and raised liberal sums for the payment of current expenses, in what was supposed to be a temporary emergency; but the necessity for relief continued, for the investment in the Baltimore and Ohio, received from the founder of the University, yielded no income, and the Trustees had nearly exhausted, in the maintenance of their work, the income accumulated in the early years of the foundation. The outlook was extremely anxious.
Under these circumstances, it was natural that the eyes of the public should turn to the Legislature of the State, in the hope that Maryland would come to the support of this University, as other States have aided their institutions. The earliest suggestion of a definite character, that the State should be asked for aid, was made by the President of the Board of Trade, Mr. Eugene Levering, in his annual address of September 30, 1897, when he said:

"Before closing this Report may I be allowed to refer to a subject upon which the Board has not yet acted, but one which, in my opinion, involves very vitally the future progress and prosperity of this city? In the Report for 1896 reference was made to the disastrous results attendant upon the collapse of the Baltimore and Ohio Railroad, occurring during that year, and the effects of which still linger with us in many directions.

"During this year, and growing out of this failure of the Baltimore and Ohio Railroad, there has arisen a condition which, in its possibilities, present and remote, threatens a more serious disaster to our city than the direct losses alluded to. I refer to the permanent loss of so large a portion of its income by the Johns Hopkins University, should the recent decision in the United States Court denying the prior lien claim of the holders of the first preferred stock be sustained. What this University, with its marvelous record, has done for this city in a commercial and material aspect, making no special reference here to its many other and more important advantages, no one can fully estimate, and but few, if any, fail to recognize. The possibility, therefore, that anything should occur to retard the work, influence and onward progress of this University cannot fail to arouse the interest of all our citizens and, I believe, to secure their consent to any reasonable proposition for relief. That this feeling does exist in the community was evidenced by the prompt response to the recent appeal for an emergency fund, which, however, as is well known, is only temporary in its nature. I submit, therefore, as a simple business proposition, whether public aid, both State and city, should not be freely tendered to this University if necessary to insure its continued development and prosperity? When it is remembered, at least such appears to be the case, that the State itself was the owner of the very block of this stock which came so recently into the hands of the University, thus virtually, but without any such intention, doubtless, transferring this threatened heavy loss from itself to the University, the basis for such State aid becomes even more apparent. Such aid is by no means unusual in some of the other States, a recent example being that of the State of Pennsylvania.
and the Lehigh University. In view, therefore, of the great importance of this subject, as also of the approaching session of the legislature, I have felt it to be proper to call your attention thereto and, through you, to that of the community at large. All of which is respectfully submitted."

The question thus raised was discussed by the daily press of the city, and attracted attention throughout the State. A small company of gentlemen, intimately acquainted for many years with the work of the University, held many meetings to consider the best methods of procedure, and at length determined to call a public meeting of business men, to consider what could be done. The Trustees, seeing no escape from the necessity of an appeal for relief, acquiesced in this movement, and authorised the following announcement to be made at the annual celebration, on the twenty-second of February:

"In accordance with the wishes of many of its friends and supporters, taxpayers and citizens of Maryland, the Johns Hopkins University has determined to present a statement of its financial condition to the Legislature of Maryland, and to ask for State aid. They will in their memorial set forth the work accomplished by the University and their reasons for seeking an appropriation. In support of this memorial they ask the cooperation of the newspapers of the city and State and also of intelligent individuals in public and private life, including the alumni of the University, of whom thirteen hundred are Marylanders. Ample statements have been prepared for submission to the Legislature, on whose favorable consideration the University relies with confidence and hope."

On the same occasion Dr. Charles Kendall Adams, President of the University of Wisconsin, and formerly President of Cornell University, delivered an admirable address setting forth the reasons why a State might fitly make generous contributions for the encouragement of higher education. The speech was illustrated by examples drawn from other States of the Union, especially the States of the Northwest. It was
fully reported in the journals of the day, and was widely distributed in pamphlet form. It contributed without doubt to the enlightenment of public opinion, which was also influenced by the letters that were printed from President Eliot, of Harvard, President Low, of Columbia, President Dwight, of Yale, President Patton, of Princeton, President Fell, of St. John’s, President Silvester, of the Maryland Agricultural College, and by the favorable comments of the public press in Maryland and at a distance.

Immediately after this address, on Saturday, February 26, a public meeting was held in the Merchants’ Club called by a committee consisting of Messrs. Henry J. Bowdoin, Eugene Levering, Blanchard Randall, Henry A. Parr, John Waters, George R. Willis, S. Davies Warfield, Lloyd L. Jackson, and Robert Ramsay.

A large company of business men were there assembled; Mr. Henry A. Parr was chosen Chairman and Mr. Blanchard Randall, Secretary; Mr. Eugene Levering presented the case of the University, in a carefully prepared statement.

The meeting heartily commended the proposal to appeal to the legislature, and requested the Chairman to designate a committee of ten to present the needs of the University to the Legislature, then assembled in Annapolis. He named as members of this committee: Messrs. S. Davies Warfield, Chairman, Edward L. Bartlett, Douglas H. Thomas, Robert H. Smith, Louis McLane, A. Roszel Cathcart, Andrew D. Jones, William A. Fisher, Henry J. Bowdoin, and George R. Willis; Henry A. Parr, ex officio, as presiding officer of the meeting, was added to the number.

In support of this request, more than one hundred citizens of Baltimore, including many of the most influential pro-
professional and business men, proceeded to Annapolis on the third of March, and appeared before the Committee of Ways and Means. The subject was presented by the Attorney-General, Hon. H. M. Clabaugh, who was followed by Hon. Bernard Carter, Hon. William A. Fisher, and Robert H. Smith, Esq.

The University respectfully requested the Legislature to give the sum of $100,000 annually, in return for which the University proposed to establish twenty-six free scholarships, one for each Senatorial district, and asked such an amendment of its charter as would make the Governor of the State and the Chief Justice ex-officio members of the Board of Trustees. The Legislature did not approve this proposal, and it was voted down, by a decisive vote, in the lower house, after having been passed by the Senate.

Subsequently, on further consideration, the Legislature agreed to give, without any conditions, for two years, the sum of $50,000 annually by the following enactment,—which received the approval of Governor Lowndes, April 7, 1898:

Whereas, it has been represented to the General Assembly, that by reason of the failure of the Baltimore and Ohio Railroad Company to pay dividends on the preferred stock of said Company, whereby the Johns Hopkins University has had its income so decreased as to seriously cripple its work as an educational institution, and said Johns Hopkins University has asked the General Assembly to aid it in tiding over the present emergency with an appropriation, in the hope that in the near future its regular income may be restored and it will be enabled to continue its work of education, upon its own resources, without further aid from the State, and

Whereas, the General Assembly holding in view the generous purposes of that distinguished philanthropist, who gave the accumulated wealth of a long and busy life to the founding and maintenance of this now celebrated and renowned seat of learning; and believing that it would be a public calamity to have it embarrassed at this stage of its growth, feels in
Aid from the State.

duty bound to stretch out the helping hand of the State by appropriating a sum of money in aid of said University, therefore:

SECTION 1. Be it enacted by the General Assembly of Maryland, That there is hereby appropriated to the Johns Hopkins University out of any money in the Treasury not otherwise appropriated, the sum of Fifty Thousand dollars for the year eighteen hundred and ninety-eight, and Fifty Thousand dollars for the year eighteen hundred and ninety-nine.

SECTION 2. And be it enacted, That the Treasurer, on the warrant of the Comptroller, be and he is hereby authorized and directed to pay to the Trustees of the Johns Hopkins University the sum of money hereinbefore appropriated.

SECTION 3. And be it enacted, That this Act shall take effect from the date of its passage.

At their next meeting (May 2), the Trustees addressed the following acknowledgment to those who had cooperated in this movement:

The Trustees of the Johns Hopkins University, having learned that the Legislature of the State has appropriated the sum of $50,000 annually for two years to relieve the financial condition of this University, return their grateful acknowledgments to the Governor and to the Senators and Delegates in the General Assembly for this timely assistance.

It is a great gratification to know that the people of this State appreciate the value of the work that is here in progress, and its important influence upon the progress of Maryland.

The Trustees believe that as this renowned institution becomes better known in every part of the State, its value will be more distinctly seen and appreciated. Its teachers will continue to show, whenever opportunities occur, their desire to contribute to the moral, social, and educational welfare of the State, as well as to the development of its natural resources.

The Trustees also record their appreciation of the invaluable aid of the daily and weekly newspapers (including some that are published beyond the boundaries of the State) in explaining the work of the University and presenting its claims to the favorable consideration of the public.

They likewise acknowledge with gratitude the cordial support which the University has received from other citizens,—many of them Baltimoreans and many of them resident at a distance, some of them acting as individuals and others acting in associations and committees. They also thank the Citizens' Committee of Baltimore and the Johns Hopkins Alumni Association for their earnest and influential advocacy of the memorial of the Johns Hopkins University.
Statistics.

Annual Statistics.

The academic staff numbered during the year one hundred and twenty-three teachers, including forty-three professors and instructors in the Johns Hopkins Medical School. The number of students enrolled was six hundred and forty-one, of whom two hundred and seventy-nine were residents of Maryland, three hundred and thirty-eight came here from thirty-four other States of the Union, and twenty-four from foreign countries. Among the students were four hundred and fifty-six already graduated, two hundred and fifteen of whom were enrolled in the department of Philosophy and the Arts, two hundred and forty-one in the Medical department. They came from one hundred and fifty-four colleges and universities. There were one hundred and fifty-two matriculates (or candidates for the degree of Bachelor of Arts), and thirty-three were admitted as special students, to pursue courses of study for which they seemed fitted, without reference to graduation. The degree of Bachelor of Arts was conferred upon forty-six candidates, the degree of Doctor of Medicine upon twenty-two, and thirty-six were promoted to the degree of Doctor of Philosophy. Certificates of proficiency in applied electricity were awarded to nine candidates.

The following statistics have been prepared, as in former years, by the Registrar, Mr. T. R. Ball. The first table indicates the enrolment of students in each year since the University was opened in the autumn of 1876:
### Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Enrolled</th>
<th>Graduates (incl. Fellows.)</th>
<th>Matriculates</th>
<th>Non-Matriculates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876-77</td>
<td>89</td>
<td>54</td>
<td>12</td>
<td>23</td>
</tr>
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<td>1877-78</td>
<td>104</td>
<td>58</td>
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<td>22</td>
</tr>
<tr>
<td>1878-79</td>
<td>123</td>
<td>63</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>1879-80</td>
<td>159</td>
<td>79</td>
<td>32</td>
<td>48</td>
</tr>
<tr>
<td>1880-81</td>
<td>176</td>
<td>102</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>1881-82</td>
<td>175</td>
<td>99</td>
<td>45</td>
<td>31</td>
</tr>
<tr>
<td>1882-83</td>
<td>204</td>
<td>125</td>
<td>49</td>
<td>30</td>
</tr>
<tr>
<td>1883-84</td>
<td>249</td>
<td>159</td>
<td>53</td>
<td>37</td>
</tr>
<tr>
<td>1884-85</td>
<td>290</td>
<td>174</td>
<td>69</td>
<td>47</td>
</tr>
<tr>
<td>1885-86</td>
<td>314</td>
<td>184</td>
<td>96</td>
<td>34</td>
</tr>
<tr>
<td>1886-87</td>
<td>378</td>
<td>223</td>
<td>108</td>
<td>42</td>
</tr>
<tr>
<td>1887-88</td>
<td>420</td>
<td>231</td>
<td>127</td>
<td>62</td>
</tr>
<tr>
<td>1888-89</td>
<td>394</td>
<td>216</td>
<td>129</td>
<td>49</td>
</tr>
<tr>
<td>1889-90</td>
<td>404</td>
<td>229</td>
<td>130</td>
<td>45</td>
</tr>
<tr>
<td>1890-91</td>
<td>468</td>
<td>276</td>
<td>141</td>
<td>51</td>
</tr>
<tr>
<td>1891-92</td>
<td>547</td>
<td>337</td>
<td>140</td>
<td>70</td>
</tr>
<tr>
<td>1892-93</td>
<td>551</td>
<td>347</td>
<td>133</td>
<td>71</td>
</tr>
<tr>
<td>1893-94</td>
<td>522</td>
<td>344</td>
<td>123</td>
<td>55</td>
</tr>
<tr>
<td>1894-95</td>
<td>559</td>
<td>412</td>
<td>126</td>
<td>51</td>
</tr>
<tr>
<td>1895-96</td>
<td>596</td>
<td>406</td>
<td>149</td>
<td>41</td>
</tr>
<tr>
<td>1896-97</td>
<td>520</td>
<td>344</td>
<td>144</td>
<td>32</td>
</tr>
<tr>
<td>1897-98</td>
<td>641</td>
<td>456</td>
<td>152</td>
<td>33</td>
</tr>
</tbody>
</table>

During twenty-two years, three thousand three hundred and ninety individuals have been enrolled as students, of whom thirteen hundred and seventy-six are registered as from Maryland (including eleven hundred and fourteen from Baltimore), and two thousand and fourteen from sixty-four other States and countries. Twenty-one hundred persons entered as graduate students, and twelve hundred and ninety entered as
undergraduates. Of the undergraduates, three hundred and twenty-two have continued as graduate students, many of them proceeding to the degree of Doctor of Philosophy. It thus appears that two thousand four hundred and twenty-two persons have followed graduate studies here.

The following table indicates the geographical distribution of the students each year since the opening, as shown by the Annual Registers:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1876-77</td>
<td>59</td>
<td>30</td>
<td>1887-88</td>
<td>199</td>
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<tr>
<td>1877-78</td>
<td>71</td>
<td>33</td>
<td>1888-89</td>
<td>183</td>
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<td>1878-79</td>
<td>76</td>
<td>47</td>
<td>1889-90</td>
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<td>1879-80</td>
<td>97</td>
<td>62</td>
<td>1890-91</td>
<td>235</td>
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<td>1880-81</td>
<td>95</td>
<td>81</td>
<td>1891-92</td>
<td>273</td>
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<tr>
<td>1881-82</td>
<td>97</td>
<td>73</td>
<td>1892-93</td>
<td>266</td>
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<td>1882-83</td>
<td>106</td>
<td>98</td>
<td>1893-94</td>
<td>260</td>
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<td>1883-84</td>
<td>123</td>
<td>126</td>
<td>1894-95</td>
<td>260</td>
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<tr>
<td>1884-85</td>
<td>130</td>
<td>160</td>
<td>1895-96</td>
<td>272</td>
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<tr>
<td>1885-86</td>
<td>130</td>
<td>184</td>
<td>1896-97</td>
<td>254</td>
</tr>
<tr>
<td>1886-87</td>
<td>162</td>
<td>215</td>
<td>1897-98</td>
<td>279</td>
</tr>
</tbody>
</table>

The attendance upon the courses given in some of the principal subjects has been as follows during the last five years:

<table>
<thead>
<tr>
<th>Subject</th>
<th>1893-94</th>
<th>1894-95</th>
<th>1895-96</th>
<th>1896-97</th>
<th>1897-98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics and Astronomy</td>
<td>115</td>
<td>132</td>
<td>126</td>
<td>78</td>
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<tr>
<td>Physics</td>
<td>123</td>
<td>156</td>
<td>132</td>
<td>115</td>
<td>101</td>
</tr>
<tr>
<td>Chemistry</td>
<td>119</td>
<td>130</td>
<td>123</td>
<td>117</td>
<td>139</td>
</tr>
<tr>
<td>Geology and Mineralogy</td>
<td>32</td>
<td>26</td>
<td>37</td>
<td>26</td>
<td>39</td>
</tr>
<tr>
<td>Biology</td>
<td>60</td>
<td>65</td>
<td>92</td>
<td>141</td>
<td>156</td>
</tr>
<tr>
<td>Pathology and Bacteriology</td>
<td>35</td>
<td>66</td>
<td>49</td>
<td>38</td>
<td>39</td>
</tr>
<tr>
<td>Greek</td>
<td>45</td>
<td>49</td>
<td>56</td>
<td>42</td>
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</tr>
<tr>
<td>Latin</td>
<td>67</td>
<td>68</td>
<td>84</td>
<td>76</td>
<td>73</td>
</tr>
<tr>
<td>Sanskrit, etc.,</td>
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<td>60</td>
<td>46</td>
<td>34</td>
<td>40</td>
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<tr>
<td>Semitic Languages,</td>
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<td>24</td>
<td>18</td>
<td>23</td>
<td>35</td>
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<tr>
<td>German</td>
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<td>152</td>
<td>167</td>
<td>139</td>
<td>170</td>
</tr>
<tr>
<td>French, Italian, etc.,</td>
<td>83</td>
<td>83</td>
<td>92</td>
<td>109</td>
<td>79</td>
</tr>
<tr>
<td>English, etc.,</td>
<td>85</td>
<td>140</td>
<td>148</td>
<td>122</td>
<td>132</td>
</tr>
<tr>
<td>History and Political Science,</td>
<td>154</td>
<td>107</td>
<td>104</td>
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<td>129</td>
</tr>
<tr>
<td>Philosophy,</td>
<td>63</td>
<td>51</td>
<td>49</td>
<td>44</td>
<td>61</td>
</tr>
</tbody>
</table>
Statistics.

Since degrees were first conferred, in 1878, five hundred and seventy-eight persons have attained the Baccalaureate degree, four hundred and seventy-two have been advanced to the degree of Doctor of Philosophy, and thirty-seven to the degree of Doctor of Medicine, as appears from the following table,—the whole number of individuals graduated being nine hundred and ninety:—

<table>
<thead>
<tr>
<th>B. A.</th>
<th>Ph. D.</th>
<th>B. A.</th>
<th>Ph. D.</th>
<th>M. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877-78</td>
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<td>1888-89</td>
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<td>1878-79</td>
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<td>1889-90</td>
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<td>46</td>
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<tr>
<td>1887-88</td>
<td>34</td>
<td>27</td>
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</tbody>
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578 472 37

Certificates of proficiency in applied electricity have been awarded to eighty-five persons during the past ten years.

The following table indicates the enrolment of students in the Medical School since its opening in October, 1893:—

<table>
<thead>
<tr>
<th>Candidates for the Degree of M. D.</th>
<th>Doctors of Medicine</th>
<th>Total Enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1893-94</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>1894-95</td>
<td>51</td>
<td>76</td>
</tr>
<tr>
<td>1895-96</td>
<td>84</td>
<td>69</td>
</tr>
<tr>
<td>1896-97</td>
<td>123</td>
<td>11*</td>
</tr>
<tr>
<td>1897-98</td>
<td>167</td>
<td>74</td>
</tr>
</tbody>
</table>

*Beginning with 1897 the courses offered to Doctors of Medicine have been given in May and June, after the compilation of the Register, and those in attendance are now counted in the enrolment of the succeeding year.
Obituary.

During the academic year, three deaths have occurred in the Board of Trustees, namely: Dr. James Carey Thomas, who died November 9, 1897; Joseph P. Elliott, who died January 14, 1898; and Dr. Alan P. Smith, who died July 18, 1898.

An appreciative estimate of Dr. Thomas's services, adopted by the University, was printed in the last Annual Report. The Trustees likewise expressed their grief for the death of Mr. Elliott in a minute which is placed in the appendix; and, subsequently, they adopted a minute commemorative of Dr. Smith, which is also printed on a subsequent page.

Dr. Louis E. Livingood, Associate in Pathology, lost his life at sea, in the terrible disaster which befell the Bourgogne, July 4, 1898. He was a graduate of Princeton (B. A.) and of the University of Pennsylvania (M. D.), and he had been a Fellow and an Assistant of this University. He was a man of unusual ability and attainments, respected and beloved by all his associates.

A tablet, commemorative of Dr. James E. Humphrey and Dr. F. S. Conant, was placed, by permission of the Trustees, in the Biological Laboratory, in March, 1898. This tribute came from the teachers and students who had been associated in biological studies with these lamented investigators. In the University Circulars, No. 132, November, 1897, the minutes of a memorial meeting are printed, with biographical sketches. The thesis of Dr. Conant, on the Cubomedusae, which was accepted when he received the degree of Doctor of Philosophy in 1897, has been published as a memorial volume in the "Memoirs from the Biological Laboratory," [Vol. iv, No. 1], edited by Dr. W. K. Brooks.
Personal Changes.

On the second of May, 1898, three vacancies then existing in the Board of Trustees were filled by the election of Messrs. Arthur George Brown, Eugene Levering, and Richard M. Venable. The subsequent death of Dr. Smith leaves a vacancy to be filled.

The following promotions and appointments have been made during the year, the tenure of office being fixed, in each case, by the action of the Trustees:

In the Philosophical Department:

To be Professor of Physics:
Joseph S. Ames, Ph. D.

To be Associate Professor of German:
Bert J. Vos, Ph. D.

To be Associates:
- Thomas S. Baker, Ph. D., German.
- James C. Ballagh, Ph. D., History.
- Abraham Cohen, Ph. D., Mathematics.
- J. Elliott Gilpin, Ph. D., Chemistry.
- Harry C. Jones, Ph. D., Physical Chemistry.
- George C. Keidel, Ph. D., Romance Languages.

To be Instructors and Assistants:
- Gilman A. Drew, Ph. D., Zoology and Embryology.
- Duncan S. Johnson, Ph. D., Botany.
- Guy Carleton Lee, Ph. D., Elocution and History.
- Charles W. Wadner, Ph. D., Physics.
- Richard H. Wilson, Ph. D., Romance Languages.

In the Johns Hopkins Medical School:

To be Professor of Pathological Anatomy:
Simon Flexner, M. D.

To be Clinical Professors:
- Henry J. Berkley, M. D., Psychiatry.
- T. Caspar Gilchrist, M. B., Dermatology.
- J. Williams Lord, M. D., Dermatology.
Gifts.

To be Associates:
  JOHN G. CLARE, M. D., Gynecology.
  REID HUNT, Ph. D., M. D., Pharmacology.
  LOUIS E. LIVINGOOD, M. D., Pathology.

To be Instructors and Assistants:
  WILLIAM G. MACCALLUM, M. D., Pathology.
  OTTO G. RAMSAY, M. D., Gynecology.
  HUGH H. YOUNG, M. D., Genito-Urinary Surgery.

Leave of absence for the year 1898–99 has been granted to
Dr. Louis Duncan, Associate Professor of Electricity, and
his duties will be performed by Dr. Cary T. Hutchinson, a
graduate and once a fellow of this University, who has kindly
agreed to render this service.

Gifts.

Among recent gifts to the University, one of the most
welcome is the sum of five thousand dollars given by the
administratrix of a lady whose life was spent in Baltimore,
and who had intimated, not long before her death, the desire
that this disposition should be made of a portion of her
estate. After due consideration of the wants of the Uni-
versity, the Trustees acceded to the wishes of the Executive
Committee and determined that this sum should be kept
apart from other funds, and that its income should be
devoted to the purchase of books. This is the nucleus of
one of the most valuable possessions of a university, a fund
for the increase of the Library. It is a fund to which
additions of any amount may be made, and the giver may
have the satisfaction of knowing that annually, as long as
the institution lives, the income of his gift will quicken the
intellectual life of those who are here engaged in study.

The Library has received another important gift,—the
remarkable collection of journals, treatises, and pamphlets
pertaining to the science of meteorology, which was brought together and owned by the well-known meteorologist and astronomer, Professor Cleveland Abbe, of the U. S. Weather Bureau in Washington.

The collection includes 1178 volumes, of which 514 are bound, 37 volumes of charts, and about 1000 pamphlets; and it relates almost entirely to meteorology and to subjects closely cognate to it. It is considered by competent judges that it contains a more complete and serviceable series of meteorological works than is accessible elsewhere in this country, with the possible exception of the Library of the Weather Bureau at Washington. It was brought together by Professor Abbe during his many years' connection with the Bureau, and represents the results of a careful and intelligent selection of the literature covering a long period. Among the more important items are complete sets of the Publications of the Meteorological Observatories or Bureaus of Belgium, Russia, Austria-Hungary, Germany, Norway, England, the British Indies and Provinces, France, the Argentine Republic, the United States, and in fact of all countries where the study of meteorology has been followed. Among other periodicals are sets of the "Jahrbuch der Erfindungen" in 25 volumes, the "Repertorium für Meteorologie" in 17 volumes, the "Meteorologische Zeitschrift" in 14 volumes, the "Monatsberichte der Deutschen Seewarte" in 16 volumes, the "Quarterly Journal of the Royal Meteorological Society," in 6 volumes, and all of the publications of the U. S. Weather Bureau, including the daily weather charts from the beginning in 1871.

It is proposed to keep the books together under the style of the "Abbe Meteorological Library." Special shelves have
Gifts.

been provided and the books have already been arranged in one of the rooms connected with the Geological Department, near to the rooms of the Maryland State Weather Service. The collection has been admirably kept and collated, and a considerable portion of it is handsomely bound.

Professor Abbe received his education in New York and at the University of Michigan, where he taught for a time. In the four years beginning with 1860, he was engaged in longitude work under the eminent astronomer, Dr. B. A. Gould, at Cambridge, Massachusetts. After spending a year or two in Russia and at Washington, he was chosen director of the Cincinnati Observatory. Here he started the work of the public weather service which afterwards grew into the U. S. Weather Bureau at Washington, where he has been since 1871. His published contributions to meteorology and astronomy cover many titles, but his name is especially associated with the movement to establish a uniform standard of time for the American continent, and with the installation of the meteorological service of the Government Weather Bureau at Washington.

Special acknowledgments are also due to Mrs. George G. Carey for more than two hundred volumes of classical books which were owned by her husband, lately an accomplished and successful teacher of the classics, long at the head of a school in which many of our graduates received their early training.

The books of the late Dr. Robert B. Morison, referred to in the last Report, have been received and placed with his surgical instruments in the collections of the Johns Hopkins Medical School. The gift included 223 bound volumes, many dermatological journals, and the remarkable colored...
plates, ninety-four in number, known as the "Hebra-Elbinger Atlas of Skin Diseases." This gift is of great value in itself, and follows several noteworthy gifts of the libraries of other medical men of Baltimore, previously received by this University, including those of Dr. F. E. Chatard, Dr. Christopher Johnston, and Dr. Frank Donaldson. The Library of the Medical Department now numbers several thousand volumes, and is constantly increasing by purchases and gifts.

Dr. H. A. Kelly, Professor of Gynecology, has presented the library with 257 volumes, among the more noteworthy being four early copies of the English Bible, dating from 1534 to 1610; a collection of classical works, among which may be especially noted early folio editions of Herodotus, Demosthenes, Aeschines, Strabo and Pausanias; a number of works in classical archaeology; many volumes in English Literature, including several editions of Milton, among them the beautiful Pickering edition; a number of art works, including Digby Wyatt's "Industrial Art" and S. C. Hall's "European Art;" and several works of reference, among them Moreri's and Furetiere's Dictionaries. There are also some examples of early printing, one of which goes back to 1476. In addition there is a group of books in ecclesiastical history and theology, including the writings of Stillingfleet, Jeremy Taylor, Hooker, and others. The collection as a whole is remarkable for the number of bibliographical rarities and finely printed works it contains.

The Semitic library, under the supervision of Professor Haupt, to which Mr. G. W. Gail gave, a short time ago, the library of Professor Dillmann, of Berlin, continues to grow by the gifts of those who are especially interested in the Semitic languages and in biblical literature. One of the most generous and constant donors is Mr. Leopold Strouse,
Gifts.

of Baltimore, who buys for this department every year such books as may be suggested to him by the authorities of the University. His cooperation is gratefully appreciated.

A long list of gifts recorded by the Librarian is appended to this report. Among them may be named a set of 166 volumes of the Decisions of the United States Supreme Court (bound in forty-one volumes, with three of the Digest) given to the University by one of the Associates, Dr. W. W. Willoughby, in commemoration of his father, Judge Westel Willoughby, a well-known lawyer of Washington, D. C.

To the Physical Laboratory, and especially to those sections which are devoted to Electricity, some generous contributions have been made, most of which were offered through Dr. Duncan and Dr. Hutchinson. The more important are named in the following list:

From D. F. Walker, of Philadelphia: One 42-inch grindstone, with iron frame and patent trueing device. (Value, $50.)

From F. J. Sprague, of New York City: One 60-Kilowatt Thomson-Houston Alternator, with exciter, six transformers, and two choking coils. (Value, $1,000.)

From the Weston Electrical Instrument Co.: Two Wattmeters. (Value, $160.)

From the General Electric Co., of New York City: Eight hundred incandescent lamps. (Value, $100.)

From the General Electric Co., of Schenectady: One set of Dynamo Drawings; four framed photographs of Standard Railway and Lighting D. C. Generators, and four photographs of the Belt R. R. Tunnel Motors and Machinery.

From the Burton Electric Smelting Co., of Boston: One electric forge.
Gifts.

From the Deane Steam Pump Co., of Holyoke: One boiler feed pump 5" x 3½" x 7", fitted with sight-feed lubricator, stroke counter, and valves.

From the Nathan Manufacturing Co., of New York: One 1-pint sight-feed lubricator, and one ¾" subjector.


Dr. Albert Shaw, a graduate of this University and the American Editor of the Review of Reviews, has given the sum of two hundred and fifty dollars for a course of lectures on American Diplomatic History, to be delivered during the year 1898-99.

A portrait of Professor Simon Newcomb, LL. D., painted by Mr. Robert G. Hardie, of Brattleboro, Vt., was presented to the University by the colleagues and friends of this distinguished astronomer, and it has been hung with other portraits in McCoy Hall.

A bust of John W. McCoy, in bronze, by Mr. Ephraim Keyser, has been placed in McCoy Hall, as a memorial of this generous benefactor. It bears the following inscription:

JOHN WILLIAMSON MCCOY

WHOSE REQUEST THIS HALL COMMEMORATES

WAS BORN IN BALTIMORE

APRIL 2, 1821

AND DIED IN BALTIMORE

AUGUST 20, 1889

LIVING, HE ENCOURAGED CHARITIES, LITERATURE, AND ART;

DYING, HE GAVE LIBERALLY TO THE

JOHNS HOPKINS UNIVERSITY

THAT SUCCESSIVE GENERATIONS

MIGHT BE AIDED IN THE PURSUIT OF KNOWLEDGE.
The annual course of lectures on the Turnbull foundation was delivered, March 21 to April 1, by Professor Charles R. Lanman, of Harvard University, one of the first Fellows and for several years an Associate of this University. The subject was "The Poetry of India" and it was ably treated in eight lectures.

The Levering lectures before the Young Men's Christian Association were delivered in Levering Hall, in February, by the Rev. Dr. Patton, President of Princeton University, who chose as his subject "Morals and Religion." The course consisted of three lectures, and it was followed with the greatest interest by a large company of students.

In accordance with previous usage, the following lectures, planned for the instruction of students, were also open to the public during the past academic year:

A series of five lectures on "Contemporary Japan" was given in November. Dr. David Murray, late Adviser to the Japanese Minister of Education, spoke of education in Japan; Professor K. Mitsukuri, of the University of Tokyo, a graduate and once a Fellow of this University, gave an account of the University of Tokyo and recent changes in Japan; and Mr. R. Nakaseko, a graduate student of this University, illustrated by means of the stereopticon some features of the domestic life of the people and the scenery of the country.

A course of six lectures, under the auspices of the American Committee for Lectures on the History of Religions, was delivered in January by the Rev. T. K. Cheyne, D.D., Professor in the University of Oxford and Canon of Rochester. The subject was "Phases of Jewish Religious Life after the Exile."
Four courses on the Donovan foundation were given during January, February, and March, as follows: by Richard Burton, Ph. D., of Hartford, six lectures on the "Modern Novel;" by Professor Woodrow Wilson, of Princeton, three biographical lectures on "Edmund Burke, Walter Bagehot, and Sir Henry Sumner Maine;" by Professor William Knight, of the University of St. Andrews, three lectures on "Keats, Shelley, and Coleridge;" by the Rev. Henry Van Dyke, D.D., of New York, three lectures on "Wordsworth, Browning, and Tennyson."

Professor F. M. Warren, of Adelbert College, continued his lectures on French literature, giving eight lectures on "The Romantic School."

At the opening of the fifth academic session of the Medical School, an address of general interest on the subject of University Teaching was given by Dr. Michael Foster, Professor of Physiology in the University of Cambridge.

Under the auspices of the University Scientific Association, Professor George F. Barker, of the University of Pennsylvania, gave in McCoy Hall, in March, a lecture on "Liquid Air," illustrated by experiments.

The Johns Hopkins Medical School has carried on its work, during the past year, with increasing efficiency and success. The number of students has increased and the advantages of ample facilities for laboratory work, especially during the early part of the course, have been completely demonstrated. Influenced by these considerations, the Trustees decided to construct, at the charge of the Medical School, another building for laboratory work in Physiology and Pharmacology, under
the direction of Doctors Howell and Abel. In the same building a large assembly room is provided, a reading room and library for the use of the medical students, together with suitable offices for the Faculty, the Dean, and the Registrar. The building is now nearly ready to be occupied and it will greatly add to the convenience of the department and to its efficiency in instruction and investigation. The total number of students has increased from 83 in 1893-94 to 241 in 1897-98, including 167 candidates for the degree of M. D. and 74 Doctors of Medicine pursuing special advanced courses without reference to a degree.

University Assemblies.

Commemoration Day, February 22, 1898, was observed as usual in McCoy Hall by an assembly of the officers and students. The principal address, by President Adams, of the University of Wisconsin, has been alluded to on a preceding page. The degree of Doctor of Philosophy and that of Bachelor of Arts were conferred upon three candidates in each grade. The University Alumni Association held its annual meeting and banquet in the evening.

The exercises of Commencement Day were held in the Academy of Music, June 14, 1898. Certificates of proficiency in Applied Electricity were conferred upon nine persons; forty-three candidates were admitted to the degree of Bachelor of Arts; thirty-three were advanced to the degree of Doctor of Philosophy; and twenty-two students who had previously attained to the Baccalaureate degree, were promoted, after a four years' professional course, to the degree of Doctor of Medicine. The principal address was delivered by the President of the University, and the candidates were presented by
Dean Welch, Dean Griffin, Professor Remsen, and Professor Spieker. The music was given by a select orchestra under the leadership of Mr. E. L. Turnbull, a graduate of the University in 1893. The graduates and their friends were received in the evening by the President and Faculty, in the assembly room of McCoy Hall.

The New Gymnasium.

The Gymnasium, which was constructed in 1883, has long since been outgrown. The necessity of physical exercise, for health and recreation, is so obvious, that the Trustees determined, notwithstanding their diminished income, to enlarge and improve the structure. It was finally rebuilt in such a way as to secure an admirable covered court for athletic practice and sport, together with a gymnasium, properly so-called, with bath-rooms and dressing-rooms, and also with suitable offices for the Director and a place for the social intercourse of students. A full account of the building, with illustrations, is printed in the News Letter for June 8, 1898.

Marshall Prize.

The John Marshall Prize was awarded for the seventh time on Commemoration Day. The honor was bestowed on Charles Downer Hazen (Ph. D., Johns Hopkins, 1893), in recognition of the ability shown in his essay on "Contemporary American Opinion of the French Revolution."

Musical Association.

For the cultivation of musical taste and also for the promotion of social acquaintance among the members of the University and their friends, the Johns Hopkins Musical
Coöperation.

Association was formed last winter, and under its auspices and at its expense four concerts were given. They were greatly enjoyed by those who attended and will be repeated during the current year. The Association was greatly indebted to Professor Heimendahl and to the other artists who took part. The Committee of Arrangements acted under the chairmanship of Professor Haupt.

Coöperation.

The work of the Maryland Geological Survey and the State Weather Service, which is carried on with the coöperation of the Johns Hopkins University, has made efficient progress during the past year, and the results may be seen by a reference to the reports of Professor Clark, given in the Appendix.

Among the meetings held during the year in the halls of the University by outside organizations may be mentioned the first annual meeting of the Maryland Conference of Charities and Correction; the annual public meeting of the Charity Organization Society of Baltimore; public sessions in connection with the first semi-annual meeting of the Maryland Public Health Association, in November, and the second annual meeting in May; the annual meeting of the American Folk-Lore Society; three meetings of the Baltimore Society of the Archaeological Institute of America; the annual meeting of the Baltimore Society for the Suppression of Vice; and the annual meeting of the Maryland Homeopathic Medical Society.

Conclusion.

For ample information in respect to the various courses of instruction and the various investigations and studies that have
Conclusion.

been in progress, reference should be made to the details which are given as usual in the appendix. There was no session of the Marine Laboratory during the past Summer.

I close with renewed testimony to the ability and devotion of the staff of professors and associates, and to the persistence with which high ideals have been maintained by the Board of Trustees. Without such cooperation the University could not maintain its position in the field of education.

Respectfully submitted,

Daniel C. Gilman,
President.

Presented December 5, 1898.
REPORTS ON THE INSTRUCTION IN THE CHIEF BRANCHES OF STUDY.

Prepared by the Principal Instructors in the several departments.

Mathematics.

I.—GRADUATE COURSE.

Professor Craig gave courses on Advanced Theory of Functions and on the Theory of Twisted Lines and of Surfaces.

Advanced Theory of Functions.—This course began with a brief and, in a measure, an elementary course on Dirichlet's Theorem. The lecturer restricted the mathematical difficulties, as the course was meant to be of use to students of physics who wished to take rather more mathematics than is required from them. Following Dirichlet's Theorem came a pretty full account of Conform representation. This subject is so important both in Physics, Analysis, and Metrical Geometry, that it is thought all students who take merely the elementary course in theory of functions ought to get some knowledge of it. At about this time Poincaré's Theory of Fuchsian Groups, Theory of Fuchsian Functions, and their application to Linear Differential Equations were taken up. The papers are so well known that they need not be quoted by their exact titles. Several other papers were used, principally one by Stahl (Math. Ann., Vol. 33) giving the applications of the automorphic functions to the Abelian functions.

Theory of Surfaces.—This course was intended to be an advanced one from the beginning, but the make-up of the class compelled a brief introductory course on the general properties of surfaces, based chiefly on Bianchi's "Lezioni di Geometria" and, in part, on Darboux's "Théorie générale des surfaces" and on Knoblauch's "Allgemeine Theorie der Krummen Flächen." Following this section of the course was given a complete account of Darboux's Kinematical method; the more this process is studied, the more powerful and valuable it appears. After a fairly full account of the theory of lines traced on surfaces an extensive course was given on geodesic lines, and after some smaller topics, such as "geodesic representation of one surface on another," a full account was given of the theory of surfaces of constant...
positive and constant negative curve. The course concluded with a general account of minima surfaces, which subject it is hoped to develop fully next year.

Dr. Chessin gave the following courses:


This course had the character of an introduction to the Modern Theory of Functions. The theory of functions of a real variable was touched upon in connection with the general theory of functions. The ideas of Cauchy, Riemann and Weierstrass were equally developed within the limits of an introductory course.


This course was given from a purely geometric point of view after the ideas of von Staudt.


In this course of an elementary character the principles of the theory were given, together with some applications to Geometry, Physics and Mechanics.


Only Kinematics was treated in this course. In connection with it a series of lectures on the Principles of Mechanics was given in January.

Dr. Cohen gave the following courses:


This course began with quite an extended study of the theory of invariants, covariants, etc., of binary and higher forms, without the use of symbolic methods. After this, the study of the German symbolic method, with special reference, in its applications, to binary forms, was taken up.

Treatises by Salmon, F&aelig; de Bruno, Elliot, Clebsch, Gordan, and memoirs by Sylvester, Cayley and others were referred to.


This course was based on Dirichlet's *Zahlentheorie,* with frequent references to Mathews and Bachmann.

II.—Undergraduate Courses.

These courses are the same from year to year. During the year 1897–98 they were given as follows:

*For Candidates for Matriculation:*

Solid Geometry. *Four times weekly, till Christmas.* Dr. Cohen.

Trigonometry. *Four times weekly, from January 3 to March 17.* Dr. Cohen.

Analytic Geometry. *Four times weekly, from March 21 to end of year.* Dr. Cohen.

*First Year Course:*

Analytic Geometry. *Four times weekly, till Christmas.* Professor Hulburt.
Astronomy.

Differential and Integral Calculus. *Four times weekly, from January 3 to end of year.* Professor Hulburt.

*Second Year Course:*

Differential and Integral Calculus (special topics) and Determinants. *Four times weekly, till Christmas.* Professor Hulburt.

Theory of Equations. *Four times weekly, January 3 to February 11.* Professor Hulburt.

Modern Plane Analytic Geometry. *Four times weekly, February 15 to April 1.* Professor Hulburt.

Solid Analytic Geometry. *Four times weekly, April 14 to end of year.* Professor Hulburt.

*Third Year Course (Elective):*

Differential Equations. *Twice weekly, through the year.* Dr. Cohen.

THOMAS CRAIG,
Professor of Pure Mathematics.

Astronomy.

During the year 1897–98, the following courses of instruction were given:

By Associate Professor C. L. Poor:

1. General Course in Theoretical and Practical Astronomy. *Twice weekly, through the year.*

This course included a general outline of the principal problems of Sphorical Astronomy, and a discussion of the fundamental laws and equations of Gravitational Astronomy.


This was a course in the practical computation of general perturbations. The methods of Le Verrier were followed, and the perturbations of Uranus upon the Earth and of Mars upon Venus were computed.


This was an elective course for undergraduate students.

By Associate Professor A. S. Chessin:

Celestial Mechanics. *Three times weekly, first half-year.*

The following investigations were carried on during the year:

By Dr. Poor:

The Aberration of Parabolic Mirrors.

By Dr. Poor and Mr. S. A. Mitchell:

The Application of the Concave Grating to Stellar Photography.
Courses of Instruction, 1897-98.

By Mr. S. A. Mitchell:
The Astigmatism of the Concave Grating.

Up to June 1, the observatory was open for instruction under the direction of Dr. Poor, assisted by Dr. N. E. Dorsey, on eighty-one nights. The minor instruments and meridian circle were used for practice by the students. The equatorial was principally used by Mr. Mitchell for his investigations in stellar spectroscopy.

One candidate presented himself for the degree of Doctor of Philosophy, viz., S. Alfred Mitchell. His thesis was entitled "Notes on the Concave Grating and its Application to Stellar Photography."

Chas. Lane Poor,
Associate Professor of Astronomy.

Physics.

The Physical Laboratory has been open daily during the year for the work of advanced and undergraduate students. Regular courses of lectures have been given, and meetings have been held for the reading of the current journals.

The regular courses of instruction were as follows:

By Professor Rowland:
1. Heat Conduction; Light. Four times weekly, through the year.
2. Meetings for the discussion of the current physical journals. Weekly, through the year.

By Associate Professor J. S. Ames:
1. Optical Theories. Twice weekly, first half-year.
3. Advanced General Physics. Four times weekly, through the year.
4. General Physics (Minor Course). Four times weekly, through the year.

By Associate Professor Louis Duncan:
1. Applied Electricity (First Year). Twice weekly, through the year.
2. Applied Electricity (Second Year). Twice weekly, through the year.
3. Electrical Laboratory. Daily, through the year.

By Mr. H. S. Hering:
1. Electrical Measurements. Twice weekly, through the year.
2. Central Station Equipment. Four times weekly, second half-year.
3. Electrical Laboratory. Daily, through the year.

By Mr. H. G. Geer:
1. Mechanics of Engineering. Twice weekly, through the year.
2. Steam and Hydraulic Engineering. Three times weekly, through the year.
In the laboratory the following work has been done:

The Director of the laboratory, with the assistance of Mr. T. D. Penniman, has continued the experimental study of the new methods for the measurement of capacity and inductance, which were elaborated the previous year. Mr. Penniman has written a full account of these experimental researches and has submitted it as his dissertation for the Doctor's degree. Under the general guidance of the Director the final reduction and publication of the tables of solar spectrum wave-lengths have been continued. The measurements of the photographic plates have been made by Mr. L. E. Jewell, and the wave-lengths have been published from time to time in The Astrophysical Journal.

Measurements of the wave-lengths of certain elements, notably zirconium and vanadium, have been made by Mr. C. N. Harrison, and they have been published in The Astrophysical Journal. This investigation was offered by Mr. Harrison as the dissertation for his Doctor's degree.

Under the guidance of the Director and Sub-Director, the researches that follow have been carried on:

A careful study of the Zeeman effect was made, particular attention being paid to the connection between this magnetic shift of the lines and the shift due to pressure which has been studied in previous years. This research led to many interesting conclusions, and its results have been published in several journals. This work was done by Dr. Ames, with the assistance of Mr. R. F. Earhart and Mr. H. M. Reese.

Mr. Jewell's researches on the rates of rotation of different layers of the solar atmosphere have been continued; and certain observations of considerable importance on the chromosphere were also made by him.

A research begun some years ago by Dr. H. F. Reid, and continued by Mr. C. E. Mendenhall and Mr. F. A. Saunders, on the radiation of a black body, has been partially completed. The radiation at temperatures from 1200° Centigrade to 200° has been carefully studied. This research was offered by Mr. Mendenhall as the dissertation for his Doctor's degree, and will soon be published in The Astrophysical Journal.

A study of the effect of fibrous structure on the magnetization of iron was made by Mr. E. Rhoads. This research has led to several conclusions of importance both practically and theoretically. The results of it have been published in the Physical Review, and it was offered by Mr. Rhoads as the dissertation for his Doctor's degree.

The research begun in the previous year by Mr. J. F. Merrill, on the influence of surrounding dielectric on conductivity of copper wires, was completed during the year. An account of it is now ready for publication.

The recalculation of Rowland's value of the mechanical equivalent of heat, by Mr. C. W. Waidner and Mr. F. Mallory, was completed by a final
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comparison of the thermometers in question. It is interesting to note that this recalculation brings into absolute agreement the values of the mechanical equivalent of heat obtained by Professor Rowland and Mr. Griffiths, of Cambridge, assuming that there is an error in the value of the electromotive force of the Clark cell as used by Griffiths. It was shown by Dr. F. A. Wolff, in the University Circulars for June, 1898, that this error is extremely probable. This long investigation as to the thermometrical errors in the mechanical equivalent of heat has thus been brought to a most satisfactory conclusion. This research was offered by Mr. Waidner as his Doctor's dissertation.

Mr. A. F. Zahm has carried on during the year an investigation for the determination of atmospheric resistances at speeds from 200 to 500 miles an hour. This work was performed at the Catholic University in Washington, but under the direction of the Physical Laboratory of the Johns Hopkins University. This research was offered by Mr. Zahm as the dissertation for his Doctor's degree.

Abstracts of all the above researches appeared in the Johns Hopkins University Circulars for June, 1898, and many of the articles have since been reprinted in other journals. Reports of many of these investigations were also read by the various authors before the meeting of the American Association for the Advancement of Science in Boston.

The following researches have been made under the direction of Dr. Duncan, Mr. Hering, and Mr. Geer:

The effect of alternating current wave-forms on transformer losses.

To determine the relation between the strength of exciting current in a synchronous motor and the power at which the motor breaks phases.

To obtain curves of current and electromotive force under various conditions of load and excitation for the synchronous motor.

The tracing of alternating current curves by three methods: (a) Dr. Duncan's contact method; (b) Zero method; (c) Photographing on a moving film.

Among the improvements in the laboratory and its equipment may be mentioned the establishment of a machine shop, with a complete equipment of lathes, planers, milling machine, and so on. This machine shop was particularly designed to prepare apparatus for the use of advanced students, and at the same time to keep in good order the existing apparatus.

The entire laboratory has been rewired for electrical connections; and at the present time the various rooms in the laboratory are connected with the storage cells and with the dynamo room through keyboards which allow almost any desired current of any voltage to be furnished at any place.

Among the donations to the laboratory may be noted a 40" grindstone with iron frame, given by Mr. D. F. Walker, of Philadelphia.
During the year there have been enrolled sixteen graduate students, following Physics as their principal subject, and fifteen students, candidates for the certificate in electrical engineering. In June six of the advanced students received the degree of Doctor of Philosophy.

H. A. Rowland,
Professor of Physics.

Chemistry.

During the past academic year, the Chemical Laboratory has been open as usual for advanced and collegiate students. Lectures and class-room instruction have been given as indicated below:

By Professor Remsen:
1. Chemistry of the Compounds of Carbon, advanced course for graduate students. *Twice weekly until Christmas; four times weekly, from January 1 to the end of the year.*
2. Meetings for Reports on the Current Journals of Chemistry. *One and one-half hours weekly, through the year.*
3. General Chemistry (Minor Course). *Three times weekly, until Christmas.*

By Professor Morse:
1. Advanced Inorganic Chemistry, for graduate students. *Once weekly, through the year.*
2. Compounds of Carbon (Major Course). *Four times weekly, from January 1 to the end of the year.*

By Professor Renouf:
1. Advanced Inorganic Chemistry (Major Course). *Three times weekly, until Christmas.*
2. General Chemistry (Minor Course). *Four times weekly, from Christmas to the end of the year.*

By Dr. Randall:
1. Principles of Physical Chemistry, for graduate students. *Twice weekly, until Christmas.*
2. Reviews in General Chemistry (Minor Course). *Once weekly, through the year.*

By Dr. Jones:
*Special topics in Physical Chemistry for graduate students. Twice weekly, through the year.*

By Dr. Gilpin:
*Reviews in General Chemistry (Minor Course). Once weekly, first half-year.*
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By Dr. Reese:

Lectures on the chemical industries of Baltimore, with excursions, for graduate students.

Besides the lectures named above, twelve historical lectures on topics selected and assigned by the Director, have been given by advanced students. The lecturers and their subjects are named below:

- G. S. Fraps, Products of Distillation of Wood.
- J. S. Chamberlain, History of the Lactic Acids.
- W. B. Holmes, History of Furfurol.
- C. E. Waters, History of Potassium Ferrocyanide.
- R. Nakaseko, History of Indigo.
- W. N. Berkeley, History of Ammonia.
- C. E. Caspari, History of Acetone.
- S. F. Howard, Graham's Work on the Phosphoric Acids.
- F. D. Wilson, History of Thiophene.

Six candidates presented themselves for the degree of Doctor of Philosophy. They were Messrs. H. B. Arbuckle, C. G. Cook, F. Crane, W. A. Jones, E. E. Reid, and G. Ryland. The titles of their theses are:

- A Redetermination of the Atomic Weight of Zinc and Cadmium;
- Some Double Halides of Tin with the Aliphatic Amines and with Tetramethylammonium;
- A Contribution to the Knowledge of Tellurium;
- A Contribution to the Knowledge of Dicarbonyl Chloride;
- The Hydrolysis of Acid Amides;
- A Contribution to the Knowledge of Liquid Mixtures of Constant Boiling-Point.

These will be printed in separate form as dissertations and the more important parts will be published in the American Chemical Journal during the year.

There have been enrolled 43 graduate students following Chemistry as their principal subject.

Two numbers of Vol. XIX and seven numbers of Vol. XX of the American Chemical Journal have been issued.

Ira Remsen,
Professor of Chemistry.
Geology.

The Geological Laboratory was open daily throughout the year to graduate and undergraduate students. The quarters have been considerably enlarged by the addition of a series of rooms upon the lower floor of the rear building attached to Hopkins Hall, as well as by the construction of a machine shop, for the conduct of the experimental work connected with the Maryland Geological Survey.

The instruction in Geology has been somewhat modified by the withdrawal of Mr. G. K. Gilbert, of the U. S. Geological Survey, who for several sessions delivered important courses of lectures upon physiographic geology. Professor Cleveland Abbe, of the U. S. Weather Bureau, has been attached to the corps of instructors and will give a few lectures upon meteorological topics in the future.

During the past year the following courses of instruction were given:

(a) General Geology, by Professor Clark and Dr. Shattuck. *Four lectures and one afternoon in practical work each week throughout the year.*

(b) Historical Geology, by Professor Clark. *Two lectures each week throughout the year.*

(c) Geological Physics, by Associate Professor Reid. *Two lectures each week from February to May.*

(d) Mineralogy, by Dr. Mathews. *Three lectures each week throughout the year.*

(e) Petrography, by Dr. Mathews. *Two lectures each week from October to February.*

(f) Climatology, by Mr. Fassig. *Fifteen lectures in October and November.*

(g) Stratigraphic and Structural Geology, by Mr. Willis. *Two lectures each week from March to June.*

(h) Scandinavian Geology, by Professor Hans Reusch. *One lecture in March.*

(i) Topographic Methods, by Mr. H. M. Wilson. *Three lectures in May.*

(j) Rocks and Rock Weathering, by Professor G. P. Merrill. *One lecture in November.*

(k) Geological Conferences. *Fortnightly throughout the year.*

(l) Student lectures. *Fortnightly from December to May.*

Original Work and Publications. Geological work was continued by Professor Clark upon the older Coastal Plain deposits of the Middle Atlantic Slope, with the cooperation of Dr. R. M. Bagg, Jr. and Mr. A. Bibbins. A report was prepared for the Geological Survey of New Jersey upon the Cretaceous formations of that State. Several other papers were published on various phases of Coastal Plain work. Professor Clark also contributed an article to the Journal of Geology in "A Symposium on the Classification and Nomenclature of Geologic Time Divisions." Professor Clark was actively employed throughout the year in the management of the State
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Geological Survey and in the preparation for publication of the second volume of its reports.

Associate Professor Reid, as a member for the United States of the International Committee on Glaciers, was engaged in collecting information regarding the various American glaciers. He continued his work upon the movement and stratigraphy of glacier ice, spending a portion of the summer and autumn of 1897 in eastern Switzerland in the accumulation of additional data. Dr. Reid is Chief of the Division of Highways of the Maryland Geological Survey.

Dr. Mathews continued his investigations upon the crystalline rocks of the northern counties of the State. He made an extended study of the building-stones of Maryland and the industries founded thereon, and has prepared an elaborate monograph upon this subject, in connection with Professor Merrill, of the U. S. National Museum. Dr. Mathews has also been engaged during a portion of the year in an investigation of the maps and map-makers of Maryland, which he will present in the form of a report in the next volume of the Maryland Geological Survey. As Assistant State Geologist, Dr. Mathews was also engaged in the management of the State Geological Survey.

Mr. Fassig, in addition to his work in connection with the Baltimore office of the U. S. Weather Bureau, has been making a study of the history of climatological investigations in Maryland, preparatory to the publication of a report upon that subject in the new series of the Maryland Weather Service.

Dr. Shattuck began, during the summer and autumn of 1897, a study of the gravels about the head of Chesapeake Bay, preparatory to the mapping of the several gravel formations of the eastern section of the State. This work was continued on a wider scale the present summer. Dr. Shattuck also investigated the Tertiary fossils secured by Professor Robert T. Hill, of the U. S. Geological Survey, in Jamaica, and will prepare a palaeontological paper to accompany Professor Hill’s report upon the geology of that island.

Three candidates presented themselves in June for the degree of Doctor of Philosophy. Mr. Cleveland Abbe, Jr., carried on an investigation upon the physiography of the State with especial reference to the development of the streams of the Piedmont Plateau, and his report will be published by the State Geological Survey; Mr. C. C. O’Harra, carried on a very thorough investigation of the stratigraphy, structure, and mineral resources of Allegany county which will be published both as a special report and as part of a later volume upon the descriptive geology of Maryland; Mr. A. G. Leonard, was engaged in a study of the relations of the basic to the acid eruptive rocks of Cecil county, an investigation started during a period of earlier academic residence under the direction of the late Professor Williams. The results of this investigation will be published as a Bulletin of the U. S. Geological Survey.
Several other investigations were undertaken by different members of the department and will result in later communications.

*Excursions and Geological Camp.* Numerous short excursions were made during the autumn months into the region immediately adjacent to Baltimore, both in the Coastal Plain and the Piedmont Plateau. The long excursion commonly made in the spring was replaced by the establishment of a permanent camp in the vicinity of Cumberland in the heart of the Appalachian Mountains, where, under several instructors, the regular work of the Department was continued during several weeks in May. Special lecturers connected with the scientific bureaus in Washington were secured, who gave practical instruction to the students in field methods, in climatology, topography, hydrography, and agricultural soils. These subjects were daily studied as well as the more important problems presented by the geology of the district.

*Scientific Societies.* The fortnightly meetings of the Geological Society of Washington were attended from time to time during the winter by the instructors and students of the Department, all of whom were elected nonresident members of that organization. Several members of the Department also became members of the National Geographic Society and availed themselves of its privileges. The results of many of the most noteworthy investigations of the year are presented to these societies, and attendance at the meetings is considered an important part of the students’ work.

*International Geological Congress.* Professor Clark and Dr. Reid were in attendance as delegates from the University (Professor Clark was one of the National delegates, and also carried the credentials of the Governor of Maryland as State Geologist) at the Seventh International Congress of Geologists at St. Petersburg during the summer and autumn of 1897. They were allowed a period of absence for the early part of the academic year, and during this time extended their travels throughout European Russia as well as into the adjacent Asiatic provinces. They brought back valuable materials for the University collections.

Professor Clark was appointed a member of the International Committee on the Unification of Geological Nomenclature, and Dr. Reid a member of the Committee on Glaciers.

*The Abbe Meteorological Library.* Professor Cleveland Abbe, of the U.S. Weather Bureau, presented to the University, during the year, his important collection of books upon meteorological subjects. This library is regarded as one of the most complete in this country, and will prove of great value to students who are intending to carry on investigations in the field of meteorology. The library has been already placed in a room in the Geological Laboratory especially prepared for it, and Mr. Fassig acts as special librarian of the collection. This generous gift of Professor Abbe is very highly appreciated, and it is believed that it will do much to arouse an interest in meteorology in Maryland.
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Apparatus and Collections. Several important additions were made to the apparatus and collections during the year. The library was considerably enlarged by the addition of several important serials and much needed geological maps. Several valuable collections of rocks and fossils were also acquired.

Wm. Bullock Clark,
Professor of Organic Geology.

The Biological Sciences.

During the past academic year the biological laboratory has been open for advanced and collegiate students, and certain courses have been attended by students in the medical school. Lectures and class-room instruction have been given as follows:

By Professor Brooks:
1. Advanced Zoology. For graduate students. Weekly through the year.
2. (With Dr. Andrews and Dr. Johnson.) Meetings of graduate students for reports on the current literature of Zoology and Botany. Weekly.
3. Elementary Zoology. Four times a week, October 5 to January 1.
4. (With Dr. Andrews and Dr. Barton.) Elective course in Zoology. Twice a week, through the year.
5. A course of twelve lectures on the Principles of Science as illustrated by Zoology.

By Professor Howell:
1. Physiology. Three times weekly, through the year, for medical students and graduate students in biology.
2. Meetings of graduate students for reports on the current literature of Physiology. Weekly, through the year.
3. Physiological Seminary. Weekly, through the year.

By Dr. Andrews:
2. Elements of Embryology. Three times a week, from April 1 to end of session.
3. Comparative Embryology. Daily, April 1 to end of session.

By Dr. Dreyer:
Histology and Physiology. For undergraduates. Four times weekly, from January 1 to April 1.

By Dr. Barton:
Analysis of Plants. Twice weekly, from April 1 to end of session.
The Biological Sciences.

By Dr. D. S. Johnson:

Twelve lectures to graduate students, on the Morphology of Algae and Fungi.

Advanced Work in Zoology.

The following researches have been carried on in the laboratory during the year: The Activities of the Polar Bodies of Cerebratula; Ectosarcal Phenomena in the Egg of Hydra; The Echinoids and Asteroids of Jamaica; The Anatomy and Embryology of Ophiura squamata, and other Ophiuroids; The Development of Pilularia; The Physiology and Histology of the Medusae; The Ophiuroids of Jamaica; The Anatomy and Embryology of the Crustaceae; The Anatomy and Development of Termites; The Development of the Cubomedusae; The Anatomy and Development of Nucula; Budding in the Ascidians. Abstracts of most of these researches have already been published, and others are in preparation.

Two parts of Volume IV of Memoirs from the Biological Laboratory have been printed during the year, and a third is now in press.

The work of the zoological seminary, which met once a week throughout the year, consisted of reports on the progress of researches in the laboratory, and Morgan’s Animal Intelligence and Agassiz’ Essay on Classification were also read in course. A course of twelve lectures on the Principles of Science as illustrated by Zoology, by Professor Brooks, was attended by many instructors and graduate students in the University.

After the death of Dr. Conant, the holder of the Adam T. Bruce Fellowship, Dr. D. S. Johnson was appointed to succeed him, and he continued, through the year, his studies on the development of Pilularia. Dr. Johnson, while holding the fellowship, gave a course of twenty lectures, with laboratory work, for graduate students, on the Morphology of Algae and Fungi; and he also gave, by permission, two lectures at the Brooklyn Institute, New York, on Fungi.

A Fellowship was held by Gilman A. Drew, who took charge of the museum.

Dr. H. McE. Knower was appointed a fellow by courtesy, and he continued through the year in the laboratory his study of Termites.

Caswell Grave occupied the University table at the laboratory of the U.S. Fish Commission, at Wood’s Hill, where E. W. Berger and A. M. Reese also carried on their studies, by invitation from the Fish Commissioner.

The degree of Doctor of Philosophy was bestowed upon Gilman A. Drew, whose dissertation on Yoldia limatula is now in press.

Printed copies of the dissertation of E. G. Conklin, on Crepida; of M. M. Metcalf, on The Eye and Subneural Gland of Salpa; of H. L. Clark, on Synapta vivipara; of F. S. Conant, on The Cubomedusae; of D. S. Johnson, on Marsilia; and of George Lefevre, on Budding in Ascidians,—were presented to the library, in accordance with our rules.
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The Naturalists' Field Club of the University, Dr. B. W. Barton, President, held eight monthly sessions, and a number of field excursions, to which all members of the University were invited.

Advanced Work in Animal Physiology.

The advanced work in animal physiology during the past year included a systematic course of lectures by Professor Howell, as described above. The Journal Club met weekly to hear reports upon current literature. The Seminary also met weekly. The work in this course consisted in part in a study of several important investigations by du Bois Reymond and Hermann upon the electrical properties of nerve and muscle, and in part in a historical presentation of the researches leading to the discovery of several fundamental facts in physiology, such as the circulation of the blood, the localisation of function in the cerebral cortex, the existence of vaso-motor and inhibitory nerve fibres, and the occurrence and significance of glycogen. In the laboratory the usual courses were given in the experimental physiology of muscle, nerve, and heart, these courses being attended by the graduate students, together with the medical class. Special laboratory work for the more advanced students was provided individually, and consisted in the investigation of certain problems designed to illustrate physiological technique. The following papers, embodying the results of investigations carried on in the laboratory, have been published since the last report.


By Dr. C. W. Greene, Fellow in Physiology: "On the relation between the external stimulus applied to a nerve and the resulting nerve impulse as measured by the action current," the American Journal of Physiology, Vol. I; "On the relation of the inorganic salts of the blood to the automatic contractions of a strip of ventricular muscle," the American Journal of Physiology, Vol. II.

By Dr. C. W. Latimer: "On the effect of muscular fatigue upon the development of Rigor Mortis," the American Journal of Physiology, Vol. II.

Other researches are in progress, and will be published when completed.

A Fellowship was held by C. W. Greene, who during the year took charge of the library. Mr. Greene took the degree of Doctor of Philosophy in June, his dissertation being upon the physiological action of the inorganic salts of the blood. This dissertation has been published, as noted above.

W. K. Brooks,
Professor of Zoology.
Greek.

Under the direction of Professor Gildersleeve the advanced students of Greek have been organized into a Greek Seminary. According to the plan of the Seminary, the work of each year is concentrated on some leading author or some special department of literature. During the past year the centre of work was Plato, and the members, who met twice a week as a Seminary, were required to present in turn exegetical and critical commentaries on select dialogues, to make analyses of the same, and to prepare introductory lectures and papers on special points. Of the investigations and studies carried on in this field and elsewhere may be noted:

Genuineness of the Euthydemus; Structure of the Theaetetus; Comparison of Protagoras and Euthydemus; Natural History in Plato; Stylistic Influence of Herodotus in the Greek Renascence; Xenophon's Cynegeticus; Word-formation in Aristophanes; Dio Chrysostomus' Use of Homer; Law of Inheritance in Isaenus and its Social Significance; Stylistic Significance of the Consecutive Sentence in the Orators; History of the Predicative Position; Privative Compounds in Greek.

The work of the Seminary was supplemented by a course of lectures on the History of Greek Philosophy, Ritter and Preller being the basis, with constant reference to the development of philosophic style.

Besides the Seminary course proper, Professor Gildersleeve conducted a series of twenty-two exercises in extemporaneous translation from Greek into English and English into Greek, and from the beginning of January to the close of the session, lectured once a week on select chapters of Greek Syntax, and conducted weekly readings in the Iliad and Odyssey.

Associate Professor Miller conducted readings twice a week in the Republic of Plato (first half of the session) and in the Nicomachean Ethics of Aristotle (second half of the session), and gave a series of exercises in advanced Greek Composition for the benefit of candidates for the degree of Doctor of Philosophy.

Undergraduate courses were conducted as follows:

- Associate Professor Spieker:
  - Demosthenes, 54, 55; Dio Chrysostomus, *Hunters of Euboea*. *Twice weekly, first half-year.*
  - Plato, *Phaedo*. *Three times weekly, first half-year.*
  - Sophocles, *Oedipus Tyrannus*; Elegiac, Melic, and Iambic Poets. *Three times weekly, second half-year.*
  - Andocides, *de Mysteriis*. *Three times weekly, first half-year.*
- Prose Composition (two classes). *Weekly, through the year.*
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Associate Professor Miller:

Prose Composition. *Weekly, through the year.*

Undergraduates read privately for examination the following books:
Aristophanes, *Clouds*. (5).
Aeschylus, *Prometheus*. (5).
Lysias, 7, 12. (9).
Plutarch, *Themistocles*. (9).

B. L. Gildersleeve,
Professor of Greek.

Latin.

The Latin Seminary, under the direction of Professor Warren, held two meetings a week throughout the year, the centre of work being Roman Comedy. During the first half-year a course of weekly lectures was delivered by Professor Warren on the Roman Comic Poets. Portions of the *Miles Gloriosus* of Plautus and of the *Andria* of Terence were interpreted by members of the Seminary. Analyses of the following plays were presented: Of *Plautus*, *Amphitruo*, *Captivi*, *Mensaehmi*, *Miles Gloriosus*, *Mostellaria*, *Pseudolus*, *Rudens*, and *Trinummus*; of *Terence*, *Andria*, *Eunuchus*, and *Hautontimorumenos*. Papers were prepared by the members of the Seminary, on the Codex Danelensis of Terence, on the syntax of antequam and priusquam, on the syntax of similis and its compounds, on the style of Columella, and on the commentary of Donatus in reference to dramatic action.

Throughout the year Professor Warren lectured weekly on Latin Epigraphy. In the first half of the year he conducted a class in Aulus Gellius meeting once a week. In the second half of the year he lectured once a week on Roman Topography. A Journal Club met fortnightly to report on recent periodical literature in the field of Latin. In connection with the Seminary work a class met regularly under the direction of the Fellow and read rapidly plays of Plautus and Terence.

Associate Professor Smith conducted a pro-Seminary in Tibullus, meeting once a week, and lectured throughout the year, once a week, on the Roman Epigram.

Undergraduate courses were conducted as follows:

Associate Professor Smith:
*Juvenal, Pliny’s Letters*. *Three times weekly, first half-year.*
*Terence, Hautontimorumenos*; *Plautus, Mostellaria*. *Three times weekly, second half-year.*
Sanskrit and Comparative Philology.

Selections from Valerius Flaccus and Statius. *Twice weekly, second half-year.*

History of Roman Literature. *Weekly, through the year.*

Latin Prose Composition (one class). *Weekly, through the year.*

Dr. H. L. Wilson:

Livy. *Three times weekly, first half-year.*

Horace. *Three times weekly, second half-year.*

Cicero, *de Amicitia*; Sallust, *Culiline*. *Three times weekly, first half-year.*


Latin Prose Composition (two classes). *Weekly, through the year.*

Undergraduates read privately for examination the following books:


Quintus Curtius, book ii. (23).


Selections from Phaedrus. (24).


Minton Warren,

Professor of Latin.

Sanskrit and Comparative Philology.

According to the plan of the Vedic Seminary as conducted by Professor Bloomfield the work of each year is concentrated about one of the three main divisions of Vedic literature: the Rig-Veda; the Atharva-Veda; and the Brāhmaṇas and Upaniṣads. These furnish within the period of three years the principal phases of early Indian language, literature, religion and philosophy. A fuller statement of this plan is printed in the President's Annual Report for 1895.

The Brāhmaṇas and the Upaniṣads were the subjects treated in the Seminary during the past session. These are the earliest Indian texts written in prose; they represent, indeed, the earliest prose in the entire domain of Indo-European speech. The bulky compositions that go by the name of Brāhmaṇas hold the same relation to the Vedic Hymns as the Talmud does to the Old Testament. The Brāhmaṇas deal with the theological exposition of the Vedic Hymns and the priestly sacrifices which were connected with the recitation of these hymns. They abound in mythical accounts of the origin and occasions of the sacrifice: this calls forth some of the most prominent and interesting legends of India, such as the story of the flood, the migrations of the Aryans in India, and the like. An introductory description of the style, language, and literary relations of these writings was followed by the critical interpretation of selected texts.
The latter part of the year was given to the study of the sixth book of the Chândogya Upanisad. This contains on the whole the clearest statement of early Hindu Pantheism, and is very directly the historical forerunner of the later systematic Vedânta Philosophy, that Philosophy which has growingly engaged the attention of Western thinkers from the day of Schopenhauer until the present time.

Mr. J. A. Ness, Fellow in Sanskrit and Comparative Philology, conducted a class in Avestan, the language of the ancient Persian bible of Zoroaster. A preliminary study of the grammar was followed by selected readings. Mr. Ness also took charge of beginner's class in the study of the Rig-Veda, preparatory to the subject to be treated in the Seminary next year.

In Classical Sanskrit there were courses in the interpretation of the Nala and the Hitopadeça, and the regular beginner's course of two hours during the session which is the formal introduction to the study of Indian Philology as well as the Comparative Grammar of the Indo-European languages.

In Comparative Philology the most prominent event was the study, under Professor Bloomfield's direction, for the first time in this University, of a language belonging to the Balto-Slavic (Lithu-Slavic) family. A group of five advanced scholars devoted themselves successfully during the year to a comparative study of the Lithuanian language, followed by the interpretation of an easy text. The course will be continued to greater advancement during the next session, with special reference to the important theme of Lithuanian accentuation. The year after that the so-called Old Bulgarian or Church-Slavonic, the oldest dialect of the Slavic division will be taken up, and thereafter instruction in one or the other of the languages of this family may be expected as a regular part of the work of this department.

A course in General Comparative Philology began with a sketch of the linguistic ethnology of the Indo-European peoples, dealing with their ethnical interrelations, their original seat (the so-called Aryan question), and their common characteristics. Then came in brief survey sketches of India, the Vedas, Brahmanism, Buddhism; Iran, the Achemenidan inscriptions, the Zoroastrian (Avestan) religion and literature; the Indo-European peoples on the boundary line between Asia and Europe; the European peoples. This was followed by lectures and readings on the history and principles of Linguistic Science.

A course in the Comparative Grammar of the Indo-European languages dealt with the Noun-formations especially in the classical languages, Sanskrit, and the Teutonic languages. The next session's work along this line will comprise a series of conferences on Phonetics, and a course in the comparative study of the Indo-European vowels, and their ablaut-relations.

Maurice Bloomfield,
Professor of Sanskrit and Comparative Philology.
Oriental Seminary.

In the Oriental Seminary, under the direction of Professor Haupt, nineteen courses were given, special attention being paid to Hebrew, Assyrian, and Comparative Semitic Grammar.

To the study of the Old Testament nine hours weekly were devoted during the first half-year, and seven hours during the second half-year.

Professor Haupt gave a critical interpretation of the Book of Isaiah. He also interpreted Selected Chapters of the Book of Judges, besides conducting, weekly through the year, a class in Hebrew Prose Composition, the students translating idiomatic English sentences into Hebrew. To supplement Professor Haupt's advanced course on Isaiah, a class met two hours weekly, during the first half-year, for the cursory reading of the Book of Isaiah, under the guidance of Dr. Johnston, who also conducted weekly exercises in reading at sight selected portions of the Historical Books of the Old Testament. The instruction in Elementary Hebrew was given by Professor Haupt, two hours weekly through the year. Professor Haupt gave two courses of lectures on Selected Chapters of the Authorized Version, interpreting during the first half-year the Early Narratives of Genesis, and during the second half-year, Selected Psalms, while Dr. Johnston gave a course of lectures on Biblical Antiquities.

Six hours weekly were devoted to the study of Assyriology. Under the direction of Professor Haupt, the Assyrian Seminary met one hour weekly through the year, reading, during the first half-year, bilingual hymns in the fourth volume of Sir Henry Rawlinson's Cuneiform Inscriptions of Western Asia, and during the second half-year, reviewing Assyrian Grammar from the comparative point of view. An Elementary Course in Assyriology was conducted by Dr. Johnston, Dr. Meissner's Cuneiform Chrestomathy serving as text-book. Dr. Johnston also conducted the second year's course in Assyriology, interpreting, during the first term Assyrian Historical Texts, and during the second term, selected Babylonian texts, besides giving, during the first half-year, a course of lectures on the History of Assyria and Babylonia according to the cuneiform monuments.

In Arabic, an Elementary Course was given by Dr. Johnston, Socin's Arabic Grammar serving as text-book. Dr. Johnston also met a class of more advanced students in Arabic, two hours weekly through the year, interpreting selections from the Arabian Nights and from Arabic Geographers. Weekly exercises in Arabic Prose Composition were conducted by Professor Haupt.

In Biblical-Aramaic, Professor Haupt gave a critical interpretation of the Aramaic Chapters in the Books of Daniel and Ezra-Nehemiah.

In Syriac, Dr. Johnston read with the class selected portions of the Chronicles of Bar-Ebhraya.
Professor Haupt gave a course of lectures, weekly through the year, upon Comparative Semitic Grammar, discussing the formation of the noun in Semitic.

Three parts of the new translation of the Sacred Books of the Old and New Testaments, published under the editorial direction of Professor Haupt, were issued during the first half-year. They comprise the Book of the Prophet Isaiah, translated by Professor T. K. Cheyne, of Oxford; the Book of Judges, translated by Professor G. F. Moore, of Andover; and the Book of Psalms, by Professor J. Wellhausen, of Göttingen (English translation of the Psalms, by Dr. H. H. Furness, of Philadelphia), with an Appendix on the Music of the Ancient Hebrews. Part 19 of the critical edition of the Hebrew Text of the Old Testament, containing the Book of Ezra-Nehemiah, by Professor H. Guthe, of Leipzig, was issued at the end of the session. The fourth part of the third volume of the Contributions to Assyriology and Comparative Semitic Grammar, published with the cooperation of the Johns Hopkins University, and edited by Professor Haupt in conjunction with Professor Friedrich Delitzsch, of Breslau, appeared shortly before the spring recess. It contains articles by the late Dr. David W. McGee, of Toronto, on the Topography of Ancient Babylon; by Dr. Bruno Meissner, of the University of Halle, on Ancient Babylonian Laws (with nine plates of cuneiform texts); by F. Thureau-Dangin, of Paris, on Fractional Numbers in Archaic Babylonian Writing; and by Dr. Talcott Williams, of Philadelphia, on the Spoken Arabic of North Morocco.


Professor Haupt read six papers before the American Oriental Society at its meeting in Hartford, Conn., April 14-16, on (a) Some Criticisms of the Polychrome Bible; (b) the Sumerian Question; (c) The Origin of the Hebrew Nuna Accusativi; (d) Why is the Suffix of the Second Person in Semitic -ka instead of -ta? He also addressed the University Philological Association, February 18, on The Genesis of the Polychrome Bible.

Dr. Johnston presented two papers (on Meissner's Supplement to the Assyrian Lexicon, Proverbial Quotations in Cuneiform Epistolary Literature) at the meeting of the Oriental Society. He also read a paper before the University Philological Association (March 18), entitled "A Letter of Esarhaddon." The Fellow in Semitic, Mr. Grimm, read a paper before the University Philological Association (April 22) on Euphemistic Liturgical Appendices in the Book of Isaiah.

Paul Haupt,
Professor of the Semitic Languages.
German.

The German Seminary, under the direction of Professor Wood, met three times weekly, through the year. The subject for the first half-year was Goethe's Lyrical Poems. They were studied chronologically in a selection designed to illustrate the change and growth in Goethe's language and style. Particular attention was devoted to the Leipziger Liederbuch, the lyrics of the first Weimar period, and the productions of the Balladenjahr (1797). The poems were then considered, singly and in groups, as establishing or completing modern lyrical types in literature. During the second half-year, the Nibelungenlied was studied. The first sixteen Aventiuren (except the fourth, eighth and eleventh) were read, together with parts of Aventiuren 21, 25, 27, 28, 30, 33, 37, 38, 39. The text of Lachmann was used as a basis, with the editions of Bartsch and Zarncke for the strophes of MSS. B and C. The selections were made with reference to the special subjects assigned to the members of the Seminary. The chief of these were: Lachmann's criteria of genuineness, the Kürenbergerstrophe and the Nibelungen poetry of Austria, Origins of the Nibelungen metre, Laistner's Archetypus der Nibelungen, Holtzmann and the MS. C, Strophes and modern criticism, the Siegfried myth, Dietrich of Bern in Nibelungenlied und Klage.

The Germanic Society, which is composed of the Director of the Seminary and the Instructors and Graduate Students in German, held sixteen meetings during the year, in an evening session. Besides reviews and reports, the following papers were read, some of them presenting completed investigations, and others giving preliminary results of studies still in progress: Early German Versions of the Bible; the first person plural imperative in German; the close of Goethe's Tasso as a literary problem; Poe's House of Usher and its German source; Early editions of German works appearing in America; the Gothic u-declension.

Professor Wood gave a course in Gothic and the Elements of Comparative German Grammar, twice weekly, through the year. Braune's Gotische Grammatik was studied, after which parts of Ulfils and the Skeireins were interpreted, with Bernhardt's larger text as a basis. Streitberg's Urgermanische Grammatik was read entire, and was accompanied by practical exercises designed to illustrate the principles of sound-change and word-formation for the several Teutonic languages.

A class in Old Saxon, conducted by Professor Wood, met twice weekly, during the first half-year. The Heliand was read, with the editions of Sievers and Piper as a basis. Particular attention was given to recent aspects of the Pragatio, as tending to solve questions of source, scope and authorship of the poem. Correspondences between Old-Saxon and English Syntax were studied, with special reference to their application to text criticism. The Genesis fragments were also read.
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A course in Schiller's dramas, weekly, through the year, was given by Professor Wood. All the plays were read, including the fragments Demetrius and Die Malteser. Schiller's earlier pieces were compared with the classicizing and Senecan variety of the Elizabethan drama, and the similarities noted were also pointed out in the case of Lessing's Emilia Galotti. Schiller's later tragedies were then studied as uniting elements of classicism and romanticism, in the establishment of new tendencies for the modern drama. Particular attention was devoted to Wallenstein and Demetrius, as the two most characteristic examples of the new type.

In the undergraduate major course, Professor Wood conducted a class, twice weekly, during the second half-year, in Goethe's Faust, the First Part of which was read. Besides study of the origins of the drama, some attention was given to the development of Goethe's figurative style, and particularly to the physical basis of his metaphors and to the principle of suggestion in the linking of metrical paragraphs.

In the minor course A, Professor Wood conducted weekly exercises in prose composition.

Dr. B. J. Vos, Associate in German, gave the following courses:

Modern Dutch. Twice weekly, through the year.

After an introductory study of the grammar (Ahn-IIoogvliet), selections were read from van Lennep's Ferdinand Huyck. After thus gaining a reading knowledge of the modern language, the class proceeded to the study of the literature of the XVII century. Leopold's Hoofdpersonen uit de geschiedenis der Nederlandsche letterkunde and Jonckbloet's Letterkunde in de XVII e eeuw were used as text-books for this purpose, additional material being furnished in the case of Hooff and Bredero. The special study of Vondel it was found necessary to postpone until the following year.

History of German Literature in the XI century. Twice weekly, second half-year.

With the text in Müllenhof and Scherer's Denkmäler as a basis, poems of the latter half of the XI and the beginning of the XII century were studied in connection, more especially, with the recent contributions to the history of the period by Kelle in the second volume of his Geschichte der deutschen Litteratur.

Middle High German. Twice weekly, first half-year.

As in former years, Paul's Mittelhochdeutsche Grammatik was studied as an introduction to Middle High German Phonology, Inflection and Syntax. Subsequently Heimbrecht (ed. Keinz) was read in class.

Undergraduate Course:

In the major course, Lessing's Nathan der Weisse was read. The classical period of German literature was studied in Scherer's History of German Literature, Vol. 2. As private reading, Goethe's Tasso was assigned.

In the minor course A, the following works were read in class: Goethe, Hermann und Dorothea; Schiller, Maria Stuart; Chamisso, Peter Schlemihl.
In the case of the first two works, the study of metrical form also received some attention. Gutzkow’s Zopf und Schwert was assigned as private reading.

In the elementary course, for students in the preliminary year, Thomas’s Practical German Grammar (Parts I and II) were studied. In addition, considerable time was devoted to drill-work in connected discourse, the ground covered being the same as that required for the matriculation examination in the Elements (Meissner, German Conversation, pp. 1-54).

Finally, four short German plays were read from the collection of E. S. Buchheim.

Dr. T. S. Baker gave a graduate course, weekly, first half-year, on the German Novel in the XVIII century. The period studied was from the Robinsonade to Jean Paul. Much attention was given to foreign influences, and particularly to Rousseau and the English contemporary novelists.

Dr. Baker gave undergraduate and special courses, as follows:

Minor Course, Class B. Four hours weekly.

Otis, Elementary German; Brandt, German Reader (66 pp.); von Moser, Der Bibliothekar; Goethe, Egmont; E. S. Buchheim, Elementary German Prose Composition; Whitney, German Grammar.

Prose Composition, in the major course. Weekly.

C. A. Buchheim, Materials for German Prose Composition; Wilmanns, Deutsche Schulgrammatik, 2. Teil.

Elective Course. Contemporary Literature in Rapid Readings. Two hours weekly.

Baumbach, Der Schwiegersonn; von Ebner-Eschenbach, Muterlebtes; Hauptmann, Die Versunkene Glocke.

Readings in Natural Science. Twice weekly.

Brandt and Day, German Scientific Reading (150 pp.); von Helmholtz, Goethe’s Naturwissenschaftliche Arbeiten; Cohn, Uber Bakterien, die kleinsten lebenden Wesen.

Mr. Julius Hofmann met a class of graduates, for Scientific Reading, twice weekly. Dippold’s Scientific German Reader (80 pp.) was used as textbook. He also conducted a class in Conversational German, weekly, through the year. German poems were used as a basis for syntactical exercises, and topics were taken from the scholar’s life, the lecture books, the lecture room.

Henry Wood,
Professor of German.
Courses of Instruction, 1897-98.

English.

1. Advanced Courses.

The English Seminary, conducted by Professor Bright, met twice a week (four hours), throughout the year. During the first half year the poetry of Cynewulf and his school was studied. After a critical reading and examination of the Chriof, as to unity of structure, sources, and affinities (Bi Monna Craeftum, Bi Monna Wyrdum, Bi Monna Ìéane, Be Domes Dego, etc.), the Juliana, the Elene, the Andreas (with the Fata Apostolorum, and the Napier Fragment), the Gu'sldc, the Riddles, the Phoenix, and the Judith were studied in the same manner. The problem of Cynewulf's authorship was investigated, and the history of the study of Anglo-Saxon poetry was reviewed. In the second half-year the Canterbury Tales of Chaucer were studied.

Professor Bright gave a course of lectures (two hours a week the first half-year, one hour a week the second half-year), on English versification.

A class was conducted by Professor Bright in the critical study of the early plays of Shakespeare (one hour a week the first half-year, two hours a week the second half-year).

The members of the Seminary met as a Journal Club (fortnightly, two hours) for reports on current periodicals, reviewing of new books, and the reading and discussion of original papers.

Professor Wm. Ifand Browne delivered a course of lectures (weekly, throughout the year). The subject first treated was the English Drama from Dryden to Sheridan. The causes of the decline of the older drama were examined; the two schools, that founded on Shakespeare and that founded on Jonson, and the decadence of each, were briefly considered; the rise of the "genteeel comedy," of the sentimental drama, of the bourgeois drama, and of the revolutionary, or antinomian drama, and the reaction, were treated more fully. Lectures were also given on the Influence of German on English Literature, and on the Astrology of the Middle Ages.

2. College Courses.

The English major class met Professor Bright, twice a week, through the year, for the study of Anglo-Saxon, using as a text-book Bright's Anglo-Saxon Reader.

This class also met Professor Browne twice a week. One hour weekly was given to the study of the Scottish Poets from Barbour to Lyndsay, and one hour weekly to (1) the Elizabethan literature, and (2) the literature of the fourteenth century.

The English minor class was conducted by Professor Browne. The class studied Early and Middle English texts (two hours a week), using Morris and Skeat's Specimens as the text-book, and English literature (two hours a week), using the Morley-Tyler Manual of English Literature.

A class in Rhetoric and English Composition met Professor Greene three times weekly, throughout the year. Theory was imparted by means of
text-book (A. S. Hill's *Principles of Rhetoric*), lectures and discussions; practice was obtained by the writing of about thirty-five short papers and of five formal essays. Of the short papers a few were read and criticised in the presence of the class from week to week; of the essays about one-half were read and criticised privately with the writers, and were returned to them for correction. Each member of the class made a careful study of the style of one prose author (usually of a nineteenth century author), and presented the results of his study in a series of short papers. The class work included a study of representative passages of description and narration.

A class in English Literature met Professor Greene three times weekly, throughout the year. This class made a general survey of English Literature from the beginning to the first quarter of the seventeenth century. A detailed study was made of the works of Chaucer, Spenser, and Shakspeare. Of the writings of these poets a considerable amount was critically studied in the class-room; and much more was read by the members of the class in their private reading. Each member of the class prepared two essays. In addition to the regular class-room exercises, three readings from the poems of Chaucer and twelve lectures upon the dramas of Shakespeare were given for the benefit of those members of the class who desired to attend them.

An elective course in English Literature from the last half of the seventeenth century through the first quarter of the nineteenth century—from Dryden to Wordsworth—was given by Professor Greene, twice weekly, throughout the year. In connection with the weekly lectures and discussions, the members of the class did a large amount of private reading. Each member of the class prepared and read before the class two essays.

3. Lectures on Literature.

The seventh course of the Percy Turnbull Memorial Lectures on Poetry was given by Mr. Charles R. Lanman, Ph. D., Professor of Sanskrit in Harvard University. The subject was "The Poetry of India," which was treated in eight lectures.

The following courses of public lectures were given on the Donovan Foundation of a Professorship of English Literature: (1) Mr. Richard Burton, Ph. D., of Hartford, Conn., gave a course of six lectures on "The Modern Novel;" (2) Professor William Knight, LL. D., of the University of St. Andrews, Scotland, gave three lectures, one each on Coleridge, Shelley, and Keats; (3) the Rev. Henry Van Dyke, DD., LL. D., of New York, gave three lectures on "Three Nineteenth Century Poets and Prophets,—Wordsworth, Browning, and Tennyson."

**James W. Bright**,  
Professor of English Philology.  
**William Hand Browne**,  
Professor of English Literature.  
**Herbert Eveleth Greene**,  
Collegiate Professor of English.
Romance Languages.

I. Graduate Courses:

Professor Elliott conducted advanced courses as follows:

Romance Seminary. Two hours a week, through the year.

The work centered here on the Fables of Marie de France, of which it is proposed eventually to issue a critical edition based on the original manuscripts. The object of the course has been to acquire a working knowledge of the fable literature of antiquity and the middle ages; to become acquainted with the characteristics of the Norman and Anglo-Norman dialects in which some of the more important manuscripts are written; to present the fundamental principles of text-criticism and text-constitution, for which five fables were examined. These were based on five English and eleven French manuscripts. A clear view of the morphology and phonetics of the language was obtained as contrasted with those of the Isle-de-France. Professor Elliott directed the text-constitution and criticism in this work, while the comparative study of the selected fables was undertaken by the members of the Seminary under the supervision of Dr. Keidel, and reports were presented which embodied the chief results of the special investigations made by each student.


The object here was to give the student an introduction to the phonetics and morphology of Folk- and Low-Latin as the common basis for a scientific study of the modern Romance idioms. Meyer-Lübke's treatment of the subject in Gröber's Grundriss der Romanischen Philologie was taken as the starting-point for this work, in connection with which lectures were given, contrasting the popular forms with the historic development of the classical forms. The material in the Probi Appendix was classified and the popular forms worked out on the basis of Schuchardt's Vulgärlateins. Budinsky's Ausbreitung der Lateinischen Sprache, D'Arbois de Jubainville's Décexion latine en Gaule, Bonnet's Le Latin de Grégoire de Tours, Wöflin's Archiv für lateinische Lexicographie, and Seelmann's Aus- sprache des Latein were constantly used in connection with this course.

Romance Club. Weekly.

The object of this organization, to which all members of the Romance Language department belong, is to foster a common interest in everything that concerns the study of the Romance idioms. Reviews of important journal articles, papers on original investigations, discussions of literary and scientific subjects, reports of correspondence of a professional nature, represent the chief exercises that claim the attention of the club.

French Dialects. Weekly.

The Western dialects were especially considered; in addition to this, the Lorraine, Burgundian, and Champagne were treated. The method of work
Romance Languages.

was, to a great extent, practical, and had in view a sufficient acquaintance with dialect forms to enable the student to discriminate Old-French texts belonging to these different idioms. To this end the leading characteristics of the old and the modern dialects were presented in a few lectures; then, through the use of early and later texts, the student was required to recognize and name the dialect features as they occurred.

Lectures on Dante. Weekly.

The object of this course was to give the student a survey of the Dante science of to-day. In a few introductory lectures he was made acquainted with the leading philosophical and literary tendencies of Dante's time, the Inferno and Purgatorio ideas before the author's epoch. The three parts of the Divina Commedia were then analysed and presented in detail both with reference to the previously existing ideas of punishment and recompense and to those peculiar to Dante. A critical review followed of the chief editions and translations in France, Germany, and England, with a characterization of the work now doing in these countries on the Divina Commedia.

Professor F. M. Warren, of Adelbert College, gave twenty lectures, in the month of February, on mediaeval Romans d'Aventure. Some twenty poems were studied with a view to their literary and sociological features. Attention was drawn to their episodes, the probable sources of their plots, their chronological sequence, their ideals of life and their relation to other forms of mediaeval French Poetry.

Professor Warren also delivered a course of eleven lectures on the Romantic School in France. Eight of these lectures were open to the public. The beginnings of the school were traced through J. J. Rousseau, Chateaubriand, and Madame de Staël, while its contributions to French literature were emphasized by successive discussions on Nodier, Lamartine, De Vigny, Hugo, De Musset, George Sand, and Alexandre Dumas.

Dr. Marden conducted the following courses:

Spanish Seminary. Weekly.

The work of the Seminary consisted of a linguistic study of the Poema de Ferman Gonzalez. The basis for the work was a facsimile copy of the Escorial manuscript, several unpublished fragments in prose and verse, and the printed editions of both the Poema and the Old Spanish Chronicles. Subjects in connection with the phonology, morphology, syntax and versification of the poem were assigned to the various members of the Seminary, who embodied the results of their investigation in weekly reports. In short, the students were taught to handle the material, to sift and weigh the evidence in regard to doubtful and variant readings, and to make a practical application of their knowledge by constructing a critical text for two hundred and forty verses of the poem. It is intended eventually to issue a critical edition of this thirteenth century epic.
Courses of Instruction, 1897–98.

Spanish Philology. *Twice weekly.*
Baist's article in Gröber's *Grundriss der Romanischen Philologie* was taken as a basis for a series of lectures on Spanish phonology and morphology. Every fourth meeting was a quiz, for which the students prepared selected texts in Keller's *Altspanisches Lesebuch*, and made practical application of the laws deduced in the lectures.


This course consisted of lectures on the national epic in contrast to the later artificial productions. A study was made of the full length epic poems as well as the early ballad literature, and the material was grouped around such national heroes as *Rodrigo*, *The Infantes de Lara*, *Bernardo del Cariño*, *Fernan Gonzales* and *The Cid*.

Dr. Armstrong conducted the following courses:

Phonology and Morphology of Old French. *Three hours weekly.*

In this course there was given a detailed view of Old French vowels, consonants and flexion, with especial reference to the historical connection on the one hand with Folk Latin and on the other with modern French. Attention was directed chiefly to the language of Central France, other dialects being considered only for purposes of comparison. Two hours each week were given to lectures; a third was employed in the application of the principals already treated to a portion of the text of the *Chanson de Roland*, and in discussion by the instructor and students of obscure or difficult points.


A brief view of general principles and of existing phonetic schools was followed by a description of the organs of speech and a detailed examination of the mode of formation of French sounds.


Dr. Rambeau conducted the following course:


Lectures upon the history of phonetics, its importance for the teacher of modern languages and the philologist, the physiology of speech, the phonetic system of the French tongue (Parisian standard). Practical exercises in
connection with the study of phonetic texts illustrating different styles, prose and poetry (Chrestomathie française by A. Rambeau and Jean Passy).

Dr. Ogden conducted the following course:
The object of this course was to draw attention to the development of criticism in France, and to stimulate the interest and curiosity of the student in literature by characterizing the different schools of criticism which have gradually risen in this country since the beginning of the present century. Inasmuch as criticism is one of the most prominent features of French literary life to-day, this course has had an immediate interest for workers in the Romance field. Four lectures were devoted to an introduction to the main subject. Starting with the beginning of actual criticism in the seventeenth century an outline was given of the general trend of critical thought till the end of the eighteenth century. Then the line of development was carefully traced from Villemour to Sainte-Beuve and through the various ramifications of this branch of literature, embracing the so-called scientific criticism with Taine and Hennéquin and its other manifestations. The critics of the present day were studied severally, and the various principles advocated by Brunetière, Bourget, and Lemaitre were discussed. The relation of each school to its predecessor was considered, as specially significant, in bearing on the philosophic development of the literature.

Mr. Richard Henry Wilson conducted the following course:
Thirty lectures on the Syntax of the French Substantive. The case-relations of the Latin substantive were studied in their contrast with Old-French case-relations, and the latter, in turn, compared with the Modern-French periphrase.

II. Undergraduate Courses.

Associate Professor Rambeau conducted the following courses:
French: Minor Course A. Four hours weekly.
1. Short outline of the History of French Literature (xvii-xixth Centuries), and reading of Contes, Novels, and Dramas.
   Mérimée, Colomba; Béranger, Chansons (Chrestomathie by Rambeau-Passy); Victor Hugo, Hernani; Molière, Le Bourgeois gentilhomme; Alphonse Daudet, Contes (selections); Fortier, Histoire de la littérature française, Parts III, IV, V (with numerous omissions; the principal tendencies and movements, the most important writers, and all the authors of works read by the students). Private reading: François Coppée, On rend l'argent; Mérimée, Mateo Falcone, Tamango, and L'enlèvement de la redouté; Alexandre Dumas Père, L'Évasion du Due de Beaufort.

2. Modern French Comedy.
   Scribe and Legouvé, Bataille de dames; Pailleron, Le Monde où l'on s'ennuie; Angier and Sandeau, Le Gendre de M. Poirier.
3. (In connection with 1 and 2) Short lectures, frequently in French, upon various subjects of literature and related topics (cf. previous reports); exercises in pronunciation (Sound Tablets, and Rambeau-Passy); a few essential features of versification; elements of French conversation; oral reports, in French, upon authors and passages of works read by the students.

4. Syntax and Prose Composition.

Bevier's Grammar, Part III, and Logie's Exercises, I-XII, XXIX-XXXV; Kimball's exercises based on Colomba, Nos. 22-35; a few short essays upon authors and subjects connected with the private reading and class work.

French: Major Course. Two hours weekly.


2. The Romanic Movement and Contemporary Literature.


3. (In connection with 1 and 2) Lectures, mostly in French, upon various subjects of literature and related topics (cf. previous reports); exercises in pronunciation (Sound Tablets, and Rambeau-Passy); principal laws of versification, the Alexandrine verse, Classical and Romantic; French conversation; oral reports, in French, upon authors and works, or passages of works, read by the students.

4. Study of Idioms and Prose Composition.

Storm, French Dialogues, Ch. I-VI, X-XII; exercises on idiom and syntax, based upon these dialogues, Ch. X-XII, I-VI (selections). Essays with reference to subjects and authors read by the students.

Italian: Minor Course. Four hours weekly.

1. Grandgent, Italian Grammar, with exercises, Nos. 2-10; Italian Composition, Part I, Nos. 7-20; and Part II, Nos. 1-3. Fornaciari, Sintassi italiana dell'uso moderno (auxiliary verbs, moods and tenses).

2. De Amicis, Cuore, Fortezza, Un gran giorno. Verga, Vita dei campi, Nos. 1, 6, 7, 8. Capuana, Uomo, Nos. 2, 3. Serao, All'erba, sentinella!, No. 2. Goldoni, Un curioso accidente. Alfieri, Oreste. Selections from Carducci, Odi barbari; Tasso, La Gerusalemme liberata; Dante, Divina Con-
Romance Languages.

media; Fornaciari, Disegno storico della letteratura italiana; Guarnerio, Manuale di verificazione italiana.

3. Exercises in pronunciation; elements of conversation; short lectures (frequently in Italian) upon Italian history and literature and other subjects connected with the class work.

Dr. Armstrong conducted the following course:
French: Elective. Twice weekly.
Short stories of Daudet, Coppée, De Maupassant, Theuriet, About, Gautier, and De Musset.

Dr. Marden conducted the following course:
Spanish: Minor. Four hours weekly.
After a few lessons in Knapp’s Spanish Grammar, reading was begun in Matzke’s First Spanish Readings and continued to Christmas. The class then read in full Perez Galdós, Doña Perfecta, and Breton, La Independencia. Exercises in grammar and prose composition were continued throughout the first term.

Dr. Ogden conducted the following course:
French: Minor B. Four hours weekly.
The aim of this course above all is to prepare the student for an intelligent reading at sight, and is largely attended by candidates for the Doctor’s degree who require proficiency in sight translation. With this object in view comparatively little time is spent on grammatical composition, but as soon as practicable the class is started on easy prose. The first term of the past college year was devoted to acquiring a necessary knowledge of Whitney’s Brief French Grammar, and in reading the selections made by Super. The remainder of the year was given to a rapid study of French prose which was chosen so as to increase in difficulty as proficiency was gained. Translation at sight was also considered important. The ground covered was L’Évasion du Duc de Beaufort, by A. Dumas; Colomba, by P. Mérimée; Le Gendre de M. Poirier, by E. Augier; and Le Monde où fon s’ennuie, by E. Failleron.

Mr. Kuersteiner conducted the following courses:
French: Elementary Course. Three hours weekly.
The class studied all the exercises in Whitney’s Brief French Grammar, special stress being laid upon translation into French. The following works were read: Super’s French Reader; Dumas, L’Évasion du Duc de Beaufort; one-half of Daudet, La Belle Nivernaise.

Spanish: Elective. Twice weekly.
The text-books used in this class were: Knapp’s Spanish Grammar; Mantilla, Libro de Lectura, No. 2; Alarcón, Cuentos Amatorios; Palacio Valdés, José. The last work was not finished. About two hundred pages of Spanish were read.
Courses of Instruction, 1897–98.

Mr. Baxter conducted the following course:

Italian: Elective. Twice weekly.

The instruction was devoted chiefly to imparting a reading knowledge and a correct pronunciation of Italian. Grandgent's Italian Grammar was used as a basis, and was carefully studied. The following books were read: E. de Amicis, Alberto; Gherardo del Testa, L'Oro e l'Orpello (comedy); Capuana, Homo; Verga, Cavalleria Rusticana, etc. (in part).

A. M. Elliott, Professor of the Romance Languages.

History, Politics, and Economics.

This group of associated subjects, under the direction of Professor Herbert B. Adams, is represented by Associate Professors J. M. Vincent and Sidney Sherwood; B. C. Steiner, Ph. D., Associate in History; J. H. Hollander, Ph. D., Associate in Economics; W. W. Willoughby, Ph. D., Associate in Politics; J. C. Ballagh, Ph. D., Associate in History; Guy Carleton Lee, LL. B., Assistant in History; Dr. H. L. Moore, Lecturer in Economics; and J. H. Latané, Ph. D., Lecturer in Roman Law.

Occasional lectures have been given by graduates of the department, on special invitation: Professor William I. Hull, of Swarthmore; Professor F. R. Jones, of Union College; Dr. W. H. Tolman, of New York City; Professor G. W. Ward, of Western Maryland College. By invitation also Dr. David Murray, of New Brunswick, N. J.; Professor Mitsukuri, of Tokyo; Talcott Williams, of Philadelphia; Professor Herbert G. Lord, of the Teachers' College, Buffalo, N. Y.; Edward Eggleston, of New York; and Rev. Dr. Y. J. Allen, of China, have given lectures or addressed the department.

The published work by resident or recent members, in 1897–98, embraces the following special titles, grouped under the names of their respective authors: (1) Professor H. B. Adams: The Teaching of History (Annual Report of the American Historical Association for 1897, Vol. I, Washington, 1897); A College Congress (News-Letter, J. H. U., October 14, 1897); Student Life at Edinburgh (News-Letter, November 11 and December 2, 1897); Training for Citizenship (Men, Chicago, November 13, 1897); Report of the Thirteenth Annual Meeting of the American Historical Association at Cleveland, Ohio, December 28–30, 1897 (The Independent, January 6, 1898); The Teaching of History (The New Pedagogue, Baltimore, March, 1898); Johns Hopkins University—Twenty-two Potent Reasons why the University should be Helped (J. H. U., 1898; see also Morning Herald, Baltimore, March 24, 1898). (2) J. S. Bassett: Anti-Slavery Leaders of North Carolina (Studies, Series XV, No. 6). (3) J. M. Callahan: Where shall the Study of History Begin? (Indiana School Journal, March, 1898); The Neut-
History, Economics, and Politics.


Two Extra Volumes have been added to the Studies in Historical and Political Science: (1) “Industrial Experiments in the British Colonies and North America,” by Eleanor L. Lord, Ph. D. (Bryn Mawr College, 1896). Miss Lord was formerly a pupil of Professor Charles M. Andrews, who,
Courses of Instruction, 1897–98.

in 1888–89, was Fellow in History at this University; (2) "Irrigation in Utah," by Charles Hillman Brough, Fellow in Economics for the year 1897–98.

There were three candidates for the degree of Doctor of Philosophy in this department, two in History and one in Economics. The subjects and authors of the dissertations were: (1) "Hincmar: An Introduction to the Study of the Revolution in the Organization of the Church in the Ninth Century," by Guy Carleton Lee (Reprinted from Vol. VIII of the Papers of the American Society of Church History); (2) "The Colonial Executive prior to the Restoration," by Percy Lewis Kaye; (3) "Irrigation in Utah," by Charles Hillman Brough, (Studies, Extra Volume, XIX).

I.—History.

Professor Herbert B. Adams has edited the Studies and conducted the following courses of instruction:


2. History of Ancient Civilization, with a class of twenty-six undergraduates and seven graduates, two hours weekly, through the year. The growing interest in Asiatic History, particularly in the historic religions and international relations of China, Japan, and India, has rendered these subjects of increasing importance to young men. A course of class lectures was given and frequently oral examinations were held upon assigned topics.
and private readings. A careful study was made of oriental geography and of the recent development of European claims to territory on the coast of China. In connection with this class, Dr. David Murray gave two lectures on the History of Education in Japan; Professor K. Mitsukuri, of the University of Tokyo, two lectures on Recent Developments in Japan; and the Rev. Dr. Young J. Allen, one lecture on the International Relations of China.

3. History of Roman Politics, with a class of twenty-two graduate students, two hours weekly, first half-year. In this course special attention was paid to the development of Roman History in modern literature and to the influence of Old Rome upon the revival of republican politics in America and France. Each member of the class was required to prepare a digest or syllabus of the historic survivals of Rome in mediaeval and modern civilization, with a view to elaborating a course of lectures on this subject. The course of instruction related largely to the “Evolution of the Aryan,” Roman institutions of government and religion, and concluded with a presentation of the land question. Parallels were suggested between ancient and modern agrarian conditions.

4. History of the Old Régime and of the French Revolution, with a class of nineteen graduate students, two hours weekly, second half-year. This course was chiefly concerned with French absolutism or personal government, its original benefits and its later evils resulting from centralization, court life, and foreign wars; the revolutionary influence of French philosophy; the economic grievances leading directly to the French Revolution; the influence of American and Roman republican ideas; the leveling influence of the Revolution itself; the quickening influence of popular wars with neighboring countries; the rise of Napoleon Bonaparte and the re-establishment of monarchy.

5. History of the Nineteenth Century, with a class of twenty-four graduates, one hour weekly, through the year. This course was in continuation of the history of Prussia begun in the year 1896-7. The influence of Frederick the Great in founding a great modern State was emphasized and the effect was shown of his bad example in the seizure of Austrian territory. Special attention was given to the decline and fall of Prussia under Frederick’s successors and to the Prussian reconstruction after the peace of Tilsit. The economic and administrative reforms of Baron vom Stein were studied in detail. The quickening influence of popular education and military reform was illustrated in connection with the Prussian uprising against the tyranny of Napoleon. His downfall, the restoration of the Bourbons, the reconstruction of Europe, and the period of political reaction formed the concluding topics of the course.

Associate Professor John Martin Vincent has conducted the following courses:

1. Method of Historical Research, with nineteen graduate students, two hours weekly, first half-year. The various kinds of historical sources were
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described and classified, and their relative value discussed. The auxiliary sciences necessary to historical investigation were briefly treated and the processes through which historical truth is approached were illustrated. A written analysis of the whole subject was presented by each student at the close of the work.

2. *The History of Historical Writing*, with nineteen graduate students, two hours weekly, second half year. Beginning with the mediæval chroniclers of Europe, the development of historical writing was followed through the Renaissance, the Reformation, and the Revolutionary Epoch to the present day.

3. *Historical Conference*, two hours fortnightly. Nine graduate students have made cooperative studies of special problems in History, in order to gain facility in research. Reports involving criticism and interpretation of sources, studies of institutions and the construction of historical narrative have been presented by the students and subjected to the joint criticism of instructor and class. The following subjects were divided into topics for examination: The Origin of the Aryan Race; Anglo-Saxon Invasion of Britain; Blue Laws of the American Colonies. Twenty-five papers were thus prepared and discussed.

4. *European History*, with twenty-seven undergraduate students, two hours weekly, through the year. By the use of text-books, lectures, and student reports, the history of the chief European nations was followed from the fall of Rome to the present time. In connection with the history of the nineteenth century, a course of ten lectures was given on the principles of International Law.

5. *Historical Politics*, with twenty-five undergraduate students, two hours weekly, through the year. This course was provided for students not members of the historical group, and its object was to obtain just views of political science by tracing the development of government from ancient times to the present day. The latter part of the year was devoted to the study of the social and political history of the nineteenth century.

Associate Bernard C. Steiner has conducted a class course, with twenty-four students, in American Political and Constitutional History, two hours weekly, through the year.

The aim of the instruction in this course is to give a clear understanding of the Constitution and institutions of the United States. Beginning with those early movements towards union of the colonies which were caused by external pressure, the growth of the feeling of nationality is traced to the formation of our present government. The constitutional and political history of the country is then followed to the close of the reconstruction period which followed the Civil War.

Dr. J. C. Ballagh has conducted the following class courses:

1. *Greek and Roman History*, with fifteen undergraduate students, four hours weekly, through the year. The relation of oriental to classical history was pointed out, together with the influence of geography. *Greek
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history was continued through the period of Hellenism, and Roman history
to the reunion of the Eastern and Western Empires. The texts used were
English translations of Herodotus and Thucydides, and modern hand-books
like Oman’s Greece and Merivale’s Rome. A better understanding of the
social and constitutional development of Greece and Rome was obtained by
a parallel study of Greek and Roman institutions and biographies. The
class course was supplemented by extensive private readings in the best
ancient and modern authorities. Reports were required upon assigned
topics.

2. Oral Examinations in General History. Candidates for the degree of
Ph. D. were examined one hour weekly through the year on the most im-
portant periods and topics of General History. The standard books upon
each great subject were collected and made accessible to the students, so
that they could become familiar both with original sources and modern
historical writings. This systematic exercise assisted graduate students to
extend their studies over wider fields of general history and to counteract
too narrow specialization.

3. Municipal Government, with a class of nine graduate students, one hour
weekly, first half-year. The principles of European and American city
government were presented from historical and comparative points of view
with a reference to the theory, organization, and practical working of
municipal institutions. The legal position of the city as a public corpora-
tion was duly shown, with its relation to the State and to rural areas of
local government. The practical exercise of administrative functions in
their various departments were considered in detail, for example, finance,
police, sanitation, street railways, etc. The best available literature on city
government was shown to the class and topics were assigned for individual
research.

4. Southern Economic History, with eight graduate students, one hour
weekly, second half-year. The economic development of the South from
1607 to 1860 was illustrated by special lectures on Agriculture, the Land
System, Labor System, Staple Products, Extensive Cultivation, the Plant-
tation System, and the Industrial Organization of each of the Colonies.
The influence of customary and statute law, physical environment, political
and commercial relations at home and abroad was also indicated.

5. Conference on Southern History, with seven graduate students, one hour
weekly, second half-year. The object of this conference was to encourage
cooperative research in the southern field. Attention was called to original
materials and their exact location; to results already attained, and to
undeveloped subjects for investigation. The valuable resources of the
Scharf and Birney collections belonging to the University and the resources
of Baltimore libraries were utilized as far as practicable. In the work of
this conference valuable cooperation was lent by Professor Henry E. Shep-

der, formerly of South Carolina; Dr. F. E. Sparks, of the Maryland
Historical Society; Dr. J. H. Latané and Mr. E. L. Green, of Baltimore.
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The following subjects of research were presented in this conference: (1) Robert Goodloe Harper and the Law of Impeachments, by C. W. Somerville; (2) Commissary Blair of Williamsburg, by D. E. Motley; (3) Daniel Dulany the Elder, by St. G. L. Sioussat; (4) Nat Turner and Slave Insurrections in Virginia, by W. S. Drewry; (5) Virginia Society and Social Legislation, by W. T. Thorn; (6) Reconstruction Frauds in North Carolina, by C. C. Weaver.

John H. Latané, Ph. D., gave ten lectures on the Early History of Roman Law, to a class of fifteen graduate students.

Mr. Guy Carleton Lee, Fellow and Assistant in History, has given the following courses of instruction:
1. English Constitutional and Political History, with a class of twenty-four undergraduates, two hours weekly, through the year. This collegiate class is for the double purpose of teaching the political as well as the constitutional development of the English people. Instruction is given by means of class lectures and the use of text books. Gardiner's Students' History of England was the chief manual.
2. Eloquence. This was practically taught to a class of seventy-six undergraduate students, grouped in convenient sections. Training in vocal culture was designed especially for men in the first year of their college course.
3. Class Debates. These were planned for collegiate students in the two upper classes. The second year men, 51 in number, were organized in a so-called "House of Representatives," meeting on alternate Wednesdays in the Donovan Room. The third year men, 52 in number, were organized in a so-called "Senate," meeting on alternate Wednesdays. Considerable interest was shown by the students in preparation for these debates, and there was a public contest between the two classes on the evening of March 22, when the Immigration question was debated. On this occasion there was also prize speaking by representatives of the first year men.
4. Advanced Classes in Public Speaking and Debate. Three groups of undergraduate students, representing the three classes, were organized on the voluntary plan for advanced work in public speaking and debate, one hour weekly. A growing interest in this kind of work among our collegiate students is evidenced by the amount of voluntary work undertaken as well as by the increasing regularity of attendance upon the various class exercises.

II.—Politics.

Associate W. W. Willoughby conducted the following courses in Politics and Jurisprudence for graduates:
1. History of Ancient and Medieval Political Philosophy. Two hours weekly, through the year, with fifteen students. In these lectures the development of political speculation was traced from its first appearance in Greece to the time of the Reformation in England. Special attention was devoted to
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the logical relations between the various views regarding the nature of the State, the rightfulness of its authority or the proper sphere of its activities, and the speculative systems and political conditions prevailing at the times when those views were held.

2. American Public Law. Two hours weekly, through the year, with twelve students. This course was devoted to a consideration of the more difficult and unsettled points in our constitutional jurisprudence. A careful examination was made of the fundamental principles of construction and interpretation followed in this country. Based upon these were discussions and criticisms of recent cases in which the courts have been called upon to consider questions of constitutional competence and legislative discretion.

3. Political Conference. Fortnightly, through the year, with five students. Carefully prepared papers dealing with questions of political and social ethics were read and discussed. Among the topics thus reported upon were the following: Statement and Criticism of Spencer's Theory of Justice; Kidd's Social Evolution; Mill's Doctrine of Liberty; the Ethics of Land Tenure; Theories of Punishment; Distributive Justice.

III.—Economics.

Associate Professor Sherwood has conducted:

1. Economic Conference for original research and critical discussion. The conference met two hours weekly, being attended by the instructors in economics and by seven graduate students. One part of the work accomplished was the review and criticism of selected articles from the chief economic periodicals. Another branch of work was a cooperative study of the First United States Bank. This resulted in the presentation of the following articles: Origin of the First United States Bank, by T. S. Adams; Corporate Organization and Administration of the First United States Bank, by C. H. Brough; Political History of the First United States Bank, by E. A. Smith. In addition to these special lines of work, the conference has served to stimulate investigation and discussion in every field of economics in which any of its members were doing special work. The following is a list of the more important original papers communicated: (1) Sidney Sherwood: Function of the Undertaker (Yale Review, November, 1897); Tendencies in American Economic Thought (Studies, Series XV, No. 2). (2) J. H. Hollander: Causes of Agricultural Depression in Great Britain (Yale Review, February, 1898). (3) F. E. Rutter: The Sugar Schedule in the McKinley, Wilson, and Dingley Tariff Acts. (4) G. E. Barnett: Proposed Currency and Banking Reforms. (5) T. S. Adams: Index Numbers and the Determination of Prices. (6) C. H. Brough: Irrigation in Utah (Studies, Extra Volume XVIII). (7) E. A. Smith: Financial History of the Confederacy. (8) T. S. Adams: War Revenues. (9) Horace Campbell: State Banks in Russia.
Dr. Sherwood has also conducted the following courses for graduates:

2. Modern Banking, with eighteen students, first half year. This course was a comparative study of the present great banking systems of Germany, France, England, and the United States. Particular attention was given to the relation of the banks to the government, the internal organization of the great central banks and their relations to the other banking institutions of their respective countries, and the present status of the business done by the banks. Based upon these studies, certain generalizations were made as to the tendencies of modern banking and certain needed reforms in the American system pointed out.

3. Theory of Credit, with eighteen students, two hours weekly, second half year. The legal and economic elements in credit were distinguished and the wider nature of economic credit was pointed out. The part which credit plays in the organization and processes of production was analyzed in detail. Classification of credit was also made from various points of view, the relation of credit to money and prices traced, and a brief review of the historical development of the theory of credit closed the course.

4. Economic Sociology, with fourteen students, one hour weekly, through the year. This course was a study of the organization and development of society from the industrial standpoint. The fact was recognized that society rests upon the foundation of the wants and will and efforts of individuals, and the thesis maintained that the explanation of society must therefore be in terms of the individual. The way was pointed out by which social organization and the evolution of these forms may be explained by the application of the economic principle that man acts so as to gain the greatest satisfaction with the least sacrifice. In the conclusions reached, the course was a vindication of individualism.

The following undergraduate classes were conducted by Doctors Sherwood and Hollander:

1. Elements of Economics. A two hour course, attended by fifty-one students. The subjects treated were the Elementary Principles of Economics in the first half-year, and Money and Banking in the second half.

2. Advanced Economics. An elective class composed of three undergraduate and five graduate students met two hours weekly throughout the year. Attention was given to recent tendencies in industrial life and to current economic theories. The text-books used were Wells's Recent Economic Changes and Marshall's Principles of Economics.

Dr. J. H. Hollander, Associate in Economics, conducted the following special courses:

1. The Economic System of David Ricardo, with nine graduate students, two hours weekly during the first half-year. The development of the Ricardian system was traced in detail, and its important doctrines were critically interpreted as a basis of the classical economics. Particular attention was directed to Ricardo's pamphlet writings and to the influence of contemporary economic events.
2. Commonwealth Taxation in the United States, with eleven graduate students, two hours weekly during the second half-year. This course supplemented the study of Municipal Finance made in 1897. The fiscal history, theory and practice of typical American states were considered, with particular reference to the problems of taxation. Special reports were presented by individual members of the class upon taxation in Utah, Pennsylvania, Kansas, North Carolina, and Virginia.

3. Applied Economics, with twenty-two undergraduate students, two hours weekly, through the year. During the first half-year the Development of Economic Life and Thought was studied; International Trade and The Tariff formed the subjects of work during the second half-year.

Dr. Hollander also conducted a co-operative class of twelve graduate students, during the second term, in the study of Current Congressional History.

Dr. H. L. Moore, Professor of Economics in Smith College, formerly Fellow in Economics and Instructor in the Johns Hopkins University, gave a course of twelve lectures to nine graduates on the Application of Mathematics to Political Economy. The course treated of the nature of the mathematical method, the scope of economics, and the branches of mathematics which may be useful in economics. Dr. Moore also gave some historical account of the writers who have used mathematics in their economic investigations and illustrated the application of the method by discussing the mathematical theory of prices.

HERBERT B. ADAMS,
Professor of American and Institutional History.

Philosophy.

The following report of the work in Philosophy, for the academic year 1897–98, is respectfully submitted:

All candidates for the degree of Bachelor of Arts are required to follow courses in Logic, Psychology, Ethics, and the History of Philosophy, during their last year of residence. Five hours a week are assigned to these subjects. The treatment is made as simple and untechnical as possible, in order to meet the needs of those to whom these studies are new, while, at the same time, attention is called to fundamental problems so that what is done may serve as an introduction to general philosophical study. Text books are used in each subject, as affording definite material of acquisition; but informal lectures, discussions in the class, and passages from various authors assigned for reading, are largely relied upon in the presentation. Each member of the class is required to prepare two essays. During the present year, fifty students have been in attendance.

The opening weeks of the year were devoted to Logic—Jevons's Elementary Lessons in Logic and Fowler's Elements of Inductive Logic being made the
basis of instruction, with references to the works of Mill, Bain, Keynes, and other writers.

The instruction in Psychology continued from January 1 to April 1. The endeavor was to give a general view of the results of experimental methods of study, and also to emphasize the facts of conscious experience as known through introspection. Baldwin's *Elements of Psychology* and Ladd's *Outlines of Physiological Psychology* were used as text books, supplemented by many references to the works of other authors. A series of lectures on the anatomy and physiology of the nervous system was given, as a part of the course, by Dr. L. F. Barker.

After April 1, the class was occupied with the study of Ethics. The work was mainly confined to the theoretical and historical aspects of the subject; questions of applied ethics were, for lack of time, but little considered. The various forms of feeling native to our constitution and constituting the possible motives of conduct; the conditions and nature of the sense of obligation; the authority of conscience; the diversities of moral sentiment; the historic theories of morals—hedonism, utilitarianism, intuitionism, and the application to ethical theory of the doctrine of evolution—these are some of the topics treated. Fowler's *Principles of Morals*, part II, was employed as a text book, but the instruction was necessarily given, to a considerable extent, through lectures.

One hour each week was used, during the first half of the year, for a brief outline of the History of Philosophy, and the survey was brought down, in a summary way, to the modern period. During the latter part of the year a weekly lecture was given for the benefit of those who were able to attend it as a voluntary exercise.

In accordance with a custom observed for several years past, Dr. Francis T. Miles, Henry J. Bowdoin, Esq., and the President of the University, presented to the class, in half-hour addresses, considerations likely to be of service to them in the choice of a vocation. Such counsels are deeply interesting to young men at the critical period of their graduation from college, and the gentlemen who, this year, and in previous years, kindly responded to our invitation, have rendered a valuable service.

A course in the History of Philosophy, for graduate students, was conducted during the year, consisting of the reading and discussion of representative works in modern philosophy, from Descartes to Kant. The works read were as follows: Bacon's *Novum Organum*, book I and a part of book II; Descartes' *Method and Meditations*; Spinoza's *Ethics*; Leibnitz's *Monadology*; Locke's *Essay on Human Understanding*, books I, II, IV; Berkeley's *Principles of Human Knowledge*; Hume's *Treatise on Human Nature*, book I; a portion of Kant's *Critique of Pure Reason*. Ten persons attended the course. The class met once a week for discussion and criticism.

EDWARD H. GRIFFIN,
Professor of the History of Philosophy.
Drawing.

The following report of the work of the undergraduate classes in Drawing, during the year 1897-98, is respectfully submitted:

The course of instruction was, for the first half-year, drawing from simple geometrical forms, beginning with outline and working up to more complicated groups of figures in light and shade. A knowledge of freehand perspective was also included in this early instruction.

In the second half-year the classes were divided, students looking forward to courses in Medicine or Biology continued the work of drawing bones and other natural specimens in order to give them a knowledge of the practical application of drawing in the illustration of lectures in these studies. The practical worth of this work has been commended by several of the instructors in the anatomical department of the Johns Hopkins Hospital.

A class of students was instructed in botanical drawing by Dr. Dreyer, during the latter part of the term.

Students taking the course preparatory to Applied Electricity have for the second half-year followed a course in instrumental or constructive drawing, including work in the application of the principles of descriptive geometry, followed by a course of work in perspective.

This work was preparatory to the course in machine design followed later on in the department of Applied Electricity.

S. Edwin Whiteman,
Instructor in Drawing.

Physical Culture.

The following report on the work done in the gymnasium and in athletics during the session 1897-98 is respectfully submitted:

The new gymnasium was formally opened on Monday, February 7. Class work began February 14 and closed May 7.

During these three months instruction has been given, at the expense of the University Athletic Association, in wrestling by Mr. John Doyle, of the Baltimore Athletic Club, two hours a week; in fencing by Mr. Thomas Zehnter, two hours a week; in boxing by Mr. Frank Farley, three hours a week.

For the University, I, with two assistants from the German Turnverein Vorwaerts, Messrs. Thomas Zehnter and Theodore Kistler, have conducted classes in gymnasium work five days in the week from 5 to 6.30 p.m.

The gymnasium and cage have been used on an average three times a week each by lacrosse, base-ball and track teams.
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Of the one hundred and seventy-three undergraduates at the University this session, about sixty-five have played on the various teams; thirty on the lacrosse team, fifteen on the track team, fifteen on the base-ball team, and about ten have been playing partly on one team, partly on another. Over seventy-five have attended the gymnasium classes. This leaves some thirty-three who have taken no part in gymnastic or athletic work.

At the opening of the gymnasium, Dr. Renouf, Director of the Gymnasium, and myself, agreed to enforce strictly the compulsory attendance rule on the Freshmen, but to bear less strictly on the Juniors and Seniors. The roll was called every day, and those who were absent were reminded of the law and held up to it. Of the seventy-four Freshmen, only six or eight have not either attended the gymnasium regularly or played on one of the teams. The deficiency was chiefly in the Juniors and Seniors, who were really under the old régime and not easily kept up to the mark. Another year this will not be the case, and over a hundred students will have to be taken care of by the gymnasium and its instructors.

The measuring of the students and the prescribing of exercises to suit individual cases, have been done as usual, the Freshmen to a man, and, in a less degree, the other classes. Measurements are now being taken a second time, and in every case marked improvements have been made, even in so short a period.

In January, I asked for a rule to prohibit a student from playing on any team unless he reached a certain standard in his strength-tests. This has caused an increased interest in development, and students are now eagerly being examined to see how near these standards they approach.

Two hundred and twenty-five lockers have been in use, from which we have received a rental of $562.50.

The success attained by the various teams this year and the enthusiasm created in athletics generally are a complete justification of the wisdom shown in building the cage and gymnasium.

The lacrosse team, which is the most popular of all, and numbers among its players as many as the other sports put together, has this year won the Intercollegiate Championship. The track-team has gained decided success at Princeton, the University of Pennsylvania, the Intercollegiate, and the Intercollegiate Maryland games. These successes will be an incentive to further good work.

J. B. Crenshaw,
Instructor in Physical Culture.
# TABULAR STATEMENT OF COURSES OF INSTRUCTION, 1897-98.

<table>
<thead>
<tr>
<th>INSTRUCTOR</th>
<th>COURSES</th>
<th>No. of Hours per week</th>
<th>No. of hours in half-year</th>
<th>No. of hours in full-year</th>
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<tbody>
<tr>
<td>Craig.</td>
<td>Advanced Theory of Functions.</td>
<td>3</td>
<td>5</td>
<td>4</td>
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<tr>
<td>Craig.</td>
<td>Mathematical Conference.</td>
<td>1</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Craig.</td>
<td>Theory of Functions. (Elementary Course.)</td>
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<td>6</td>
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<tr>
<td>Chessin.</td>
<td>Projective Geometry. (First half-year.)</td>
<td>2</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Chessin.</td>
<td>Elliptic Functions. (Second half-year.)</td>
<td>2</td>
<td>1</td>
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<tr>
<td>Chessin.</td>
<td>Theoretical Mechanics. (Second half-year.)</td>
<td>2</td>
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<tr>
<td>Hulburt.</td>
<td>Analytic Geometry: Minor Course. (First half-year.)</td>
<td>4</td>
<td>26</td>
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<tr>
<td>Hulburt.</td>
<td>Differential and Integral Calculus. (Second half-year.)</td>
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<tr>
<td>Hulburt.</td>
<td>Determinants; Calculus. (First half-year.)</td>
<td>4</td>
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<td>Hulburt.</td>
<td>Theory of Equations; Analytic Geometry: Adv. (Second half-year.)</td>
<td>4</td>
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<tr>
<td>Cohen.</td>
<td>Differential Equations.</td>
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<td>Cohen.</td>
<td>Theory of Invariants. (First half-year.)</td>
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<td>4</td>
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<td>Cohen.</td>
<td>Theory of Numbers. (Second half-year.)</td>
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<td>Cohen.</td>
<td>Elementary Solid Geometry. (First half-year.)</td>
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<tr>
<td>Cohen.</td>
<td>Trigonometry; Analytic Geometry: Elem. (Second half-year.)</td>
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<td>Theoretical Astronomy. (Second half-year.)</td>
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<td>2</td>
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<tr>
<td>Poor.</td>
<td>Theory of Least Squares. (Second half-year.)</td>
<td>2</td>
<td>9</td>
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<tr>
<td>Poor.</td>
<td>Descriptive Astronomy.</td>
<td>2</td>
<td>3</td>
<td>2</td>
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## MATHEMATICS AND ASTRONOMY.

## PHYSICS.

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# Tabular Statement of Courses.

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**CHEMISTRY.**

**GEOLOGY AND MINERALOGY.**

**BIOLOGY.**
Tabular Statement of Courses.

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<th>Instructor</th>
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<th>No. of hours per week</th>
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**LATIN.**

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**SANSKRIT, ETC.**
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**SEMITIC LANGUAGES.**

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<td>Critical Interpretation of selected Psalms. (Second half-year.)</td>
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<td>Hebrew Comparative Grammar.</td>
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<td>Critical Interpretation of Ezra and Daniel.</td>
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<td>Haupt.</td>
<td>Assyrian Seminary. (Second half-year.)</td>
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<td>Arabic: Seminary.</td>
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<td>Johnston.</td>
<td>Hebrew Exercises.</td>
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<td>Syriac.</td>
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<td>History of Assyria and Babylonia: Lectures. (First half-year.)</td>
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**GERMAN.**

*Advanced Work.*

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<td>Old Saxon. (First half-year.)</td>
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<td>Wood.</td>
<td>Schiller’s Dramas.</td>
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<td>Vos.</td>
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<td>Middle High German. (First half-year.)</td>
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<td>Vos.</td>
<td>German Literature (XI Century). (Second half-year.)</td>
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<td>Baker.</td>
<td>The German Novel (XVIII, XIX Centuries). (First half-year.)</td>
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*Major Course.*

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood, Vos.</td>
<td>Lessing; Goethe.</td>
</tr>
<tr>
<td>Wood.</td>
<td>Prose Composition.</td>
</tr>
<tr>
<td>Baker.</td>
<td>History of German Literature.</td>
</tr>
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</table>

*Minor Course: Class A.*

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood.</td>
<td>Prose Composition.</td>
</tr>
<tr>
<td>Vos.</td>
<td>Selected Prose Readings.</td>
</tr>
<tr>
<td>Vos.</td>
<td>Classics.</td>
</tr>
</tbody>
</table>

*Minor Course: Class B.*

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker.</td>
<td>Otis; Brandt; Goethe; Von Moser.</td>
</tr>
<tr>
<td>Baker.</td>
<td>Prose Composition.</td>
</tr>
</tbody>
</table>
### Tabular Statement of Courses.

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
<th>No. of Hours per week</th>
<th>No. of Students in Half-year</th>
<th>No. of Students in Full-year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vos.</td>
<td>Elementary German</td>
<td>3</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Baker</td>
<td>Scientific Readings</td>
<td>2</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Baker</td>
<td>Contemporary Literature: Readings.</td>
<td>2</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Hofmann</td>
<td>Scientific Readings</td>
<td>2</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Hofmann</td>
<td>German Conversation</td>
<td>1</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>

#### Supplementary Courses.

- Vos.  
  - Elementary German
- Baker  
  - Scientific Readings
- Baker  
  - Contemporary Literature: Readings
- Hofmann  
  - Scientific Readings
- Hofmann  
  - German Conversation

#### Romance Languages.

- Elliott  
  - Romance Seminary: Marie de France
- Elliott  
  - French Dialects
- Elliott  
  - Romance Club
- Elliott  
  - Dante
- Elliott  
  - Popular Latin
- Raabeau  
  - Comparative Phonetics, etc. (Second half-year.)
- Rambeau  
  - French: Major Course
- Rambeau  
  - French: Minor Course (Class A)
- Rambeau  
  - Italian: Minor Course
- Armstrong  
  - French Philology
- Armstrong  
  - French Phonetics. (First half-year.)
- Armstrong  
  - Old French Readings
- Armstrong  
  - French: Elective Course
- Marden  
  - Spanish Epic Poetry
- Marden  
  - Spanish Seminary
- Marden  
  - Old Spanish Readings
- Marden  
  - Spanish Philology
- Marden  
  - Spanish: Minor Course
- Ogden  
  - French Criticism
- Ogden  
  - French: Minor Course (Class B)
- Kuersteiner  
  - Elementary French
- Kuersteiner  
  - Spanish: Elective Course
- Wilson  
  - Historical French Syntax. (First half-year.)
- Baxter  
  - Italian: Elective Course
- Warren, F. M.  
  - Romans d’Aventure. (20 lectures in February.)
- Warren, F. M.  
  - The Romantic School. (11 lectures in February.)

#### English.

- Bright  
  - English Seminary: Cynewulf; Chaucer
- Bright  
  - English Versification. (Lectures.)
- Bright  
  - Shakespeare
- Bright  
  - Anglo-Saxon
- Bright  
  - Journal Meeting. (Alternate weeks.)
- Browne  
  - English Drama (Dryden to Sheridan). (Lectures.)
- Browne  
  - Elizabethan Lit.; Early Scottish Poets: Major Course
- Browne  
  - English Literature: Early English: Minor Course
- Greene  
  - English Literature: Elective Course
- Greene  
  - English Literature: Second year
- Greene  
  - Rhetoric and Composition

#### Historical and Political Science.

- Adams  
  - Seminary of History and Politics. (Alternate weeks.)
- Adams  
  - Roman Politics
- Adams  
  - History of Civilization
- Adams  
  - Nineteenth Century
- Vincent  
  - Historical Conference. (Alternate weeks.)
- Vincent  
  - Historical Method
## Tabular Statement of Courses.

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
<th>No. of students per week</th>
<th>No. of students 4th half-year</th>
<th>No. of students 1st half-year</th>
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<tbody>
<tr>
<td>Vincent</td>
<td>European History</td>
<td>2</td>
<td>30</td>
<td>26</td>
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<tr>
<td>Vincent</td>
<td>Historical Politics</td>
<td>2</td>
<td>25</td>
<td>25</td>
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<tr>
<td>Ballagh</td>
<td>Municipal Government</td>
<td>1</td>
<td>7</td>
<td>9</td>
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<tr>
<td>Ballagh</td>
<td>General History Examinations</td>
<td>1</td>
<td>3</td>
<td>15</td>
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<tr>
<td>Ballagh</td>
<td>Southern Economic History (Second half-year)</td>
<td>1</td>
<td>15</td>
<td>4</td>
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<tr>
<td>Ballagh</td>
<td>Southern History Conference (Second half-year)</td>
<td>1</td>
<td>14</td>
<td>11</td>
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<tr>
<td>Ballagh</td>
<td>Greek and Roman History</td>
<td>1</td>
<td>15</td>
<td>7</td>
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<tr>
<td>Sherwood</td>
<td>Modern Banking (First half-year)</td>
<td>1</td>
<td>13</td>
<td>18</td>
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<tr>
<td>Sherwood</td>
<td>Theory of Credit (Second half-year)</td>
<td>2</td>
<td>18</td>
<td>22</td>
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<tr>
<td>Sherwood</td>
<td>Economic Sociology</td>
<td>1</td>
<td>7</td>
<td>14</td>
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<td>Sherwood</td>
<td>Economic Seminar</td>
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<tr>
<td>Sherwood</td>
<td>Economics; Elective Course</td>
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<td>8</td>
<td>8</td>
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<tr>
<td>Sherwood</td>
<td>Elements of Economics; Money and Banking</td>
<td>2</td>
<td>53</td>
<td>61</td>
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<tr>
<td>Holland</td>
<td>History of Economics; International Trade</td>
<td>2</td>
<td>22</td>
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<tr>
<td>Holland</td>
<td>Current Congressional History (Second half-year)</td>
<td>2</td>
<td>8</td>
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<tr>
<td>Moore</td>
<td>Mathematical Economics (Twelve lectures.)</td>
<td>1</td>
<td>12</td>
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<tr>
<td>Willoughby</td>
<td>American Public Law</td>
<td>2</td>
<td>13</td>
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<tr>
<td>Willoughby</td>
<td>Political Philosophy</td>
<td>2</td>
<td>15</td>
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<tr>
<td>Willoughby</td>
<td>Political Conference (Alternate weeks.)</td>
<td>2</td>
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<tr>
<td>Steiner</td>
<td>American Constitutional History</td>
<td>2</td>
<td>27</td>
<td>28</td>
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<tr>
<td>Lee</td>
<td>English Constitutional Law and History</td>
<td>2</td>
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<tr>
<td>Griffin</td>
<td>History of Philosophy</td>
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<td>10</td>
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<tr>
<td>Griffin</td>
<td>Logic (Until December 24)</td>
<td>5</td>
<td>50</td>
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<tr>
<td>Griffin</td>
<td>Psychology (January 1 to April 1)</td>
<td>5</td>
<td>50</td>
<td>50</td>
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<tr>
<td>Griffin</td>
<td>Ethics (After April 1)</td>
<td>5</td>
<td>50</td>
<td>50</td>
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<tr>
<td>Whitman</td>
<td>Freehand, Constructive, and Perspective Drawing</td>
<td>6</td>
<td>62</td>
<td>62</td>
</tr>
<tr>
<td>Geer</td>
<td>Mechanical Drawing</td>
<td>6</td>
<td>17</td>
<td>20</td>
</tr>
</tbody>
</table>

### PHILOSOPHY.

### DRAWING.
DEGREES CONFERRED, 1898.

Doctors of Philosophy.


Degrees Conferred, 1898.

Charles Gilpin Cook, of Glenville, Md., S. B., Haverford College, 1892. 


Percy Lewis Kaye, of Iowa City, Iowa, A. B., Iowa State University, 1895. **Subjects**: History, Politics, and Economics. **Dissertation**: The Colonial Executive Prior to the Restoration. **Referees on dissertation**: Professor Adams and Dr. Steiner.


Cleophas Cisney O'Harra, of Carthage, Ill., A. B., Carthage College, 1891. **Subjects**: Geology, Petrography, and Biology. **Dissertation**: The Geology of Allegany County, Maryland. **Referees on dissertation**: Professors Clark and Reid and Dr. Mathews.


Thomas Dobbin Penniman, of Baltimore, A. B., Johns Hopkins University, 1892. **Subjects**: Physics, Electricity, and Astronomy. **Dissertation**: Some New Methods for the Determination and Comparison of Self Inductance, Mutual Inductance, and Capacity, together with some Actual Measurements. **Referees on dissertation**: Professors Rowland, Ames, and Duncan.


Ebenezer Emmet Reid, of Lynn Haven, Va., A. M., Richmond College, 1892. **Subjects**: Chemistry, Physics, and Mathematics. **Dissertation**: Studies
in the Hydrolysis of Acid Amides. *Referees on dissertation:* Professors Remsen and Morse.


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**Doctors of Medicine.**

William Stevenson Baer, of Baltimore, A. B., Johns Hopkins University, 1894.

William Jeptha Calvert, of Lexington, Ky., A. B., University of Kentucky, 1893; Graduate Student, Kentucky State College, 1893–94.

Patrick Joseph Cassidy, of Norwich, Conn., A. B., Yale University, 1894.

John Williams Coe, of Meriden, Conn., Ph. B., Yale University, 1893.

Percy Millard Dawson, of Montreal, Canada, A. B., Johns Hopkins University, 1894.
Arthur Wells Elting, of Upper Red Hook, N. Y., A. B., Yale University, 1894.
Thomas Wood Hastings, of Morristown, N. J., A. B., Johns Hopkins University, 1894.
Alfred Birch Herrick, of Amsterdam, N. Y., A. B., Williams College, 1894.
James Hall Mason Knox, Jr., of Baltimore, A. B., Yale University, 1892, and Ph. D., 1894; A. M., Lafayette College, 1896.
Millard Langfeld, of Baltimore, A. B., Johns Hopkins University, 1893.
Gertrude Underhill Light, of Milwaukee, Wis., S. B., University of Wisconsin, 1894.
James Daniel Madison, of Mazomanie, Wis., S. B., University of Wisconsin, 1894.
Harry Taylor Marshall, of Baltimore, A. B., Johns Hopkins University, 1894.
Roger Griswold Perkins, of Schenectady, N. Y., A. B., Union College, 1893, and Harvard University, 1894.
Katherine Porter, of Baltimore, A. B., Bryn Mawr College, 1894.
Joseph Hersey Pratt, of North Middleboro, Mass., Ph. B., Yale University, 1894.
Georgiana Sands, of Port Chester, N. Y., A. B., Vassar College, 1893; Graduate Student, Barnard College (N. Y.), 1893–94.
Benjamin Robinson Schenck, of Syracuse, N. Y., A. B., Williams College, 1894.
Walter Ralph Steiner, of Baltimore, A. B., Yale University, 1892, and A. M., 1895; Graduate Student, Johns Hopkins University, 1892–94.
Emma Elizabeth Walker, of Parkersburg, W. Va., A. B., Smith College, 1887.
Andrew Henderson Whitridge, of Baltimore, S. B., Harvard University, 1894.

Bachelors of Arts.

Zadok Marshall Ballard, of Baltimore.
Robert Ernest Belknap, of Yonkers, N. Y.
Olin Baltimore Bestor, of Baltimore.
Duncan Kenner Brent, of Baltimore.
Bennet Bernard Browne, Jr., of Baltimore.
George Miltenberger Clarke, of Baltimore.
Henry Wireman Cook, of Baltimore.

Gustavus Charles Dohme, of Baltimore.
Ralph Duffy, of Baltimore.
James F. Ferguson, of Baltimore.
John Somerville Fischer, of Baltimore.
Thomas Fitzgerald, Jr., of Baltimore.
Lawrence Hall Fowler, of Catonsville, Md.
William Willoughby Francis, of Montreal, Canada.
Degrees Conferred, 1898.

William Cazenove Gardner, of Dorsey, Md.
Alexander Gordon, Jr., of Baltimore.
William Browne Hammond, Jr., of Baltimore.
Philip Warner Harry, of Pylesville, Md.
Conway Shaler Hodges, of Baltimore.
William Randle Hubner, of Catonsville, Md.
Robert Henry Jones, of Fairmount, Md.
Charles Wesley Kalb, of Catonsville, Md.
James Alfred Kennard, of Baltimore.
Louis Charles Lehr, of Baltimore.
Henry John Lucke, of Baltimore.
David Gregg McIntosh, Jr., of Towson, Md.
Frank Oldham Miller, of Baltimore.
Raymond Durbin Miller, of Baltimore.
Solomon Brenner Myers, of Baltimore.
Harold Pender, of Roland Park, Md.
Thomas Lindley Pyle, of Pylesville, Md.
Vincent Adams Renouf, of Baltimore.
George Barr Scholl, of Baltimore.
Alexander Lazear Seth, of Baltimore.
Frederick Williamson Smith, of Baltimore.
Robert Marsden Smith, of Baltimore.
Victor Edgeworth Smith, of Baltimore.
Charles Miner Stearns, of Hartford, Conn.
Leo D. Stein, of Baltimore.
William Plunket Stewart, of Baltimore.
Albert Gad Stidman, of Baltimore.
William Ellinger Straus, of Baltimore.
Joseph Nathan Ulman, of Baltimore.
John Boswell Whitehead, of Norfolk, Va.
Jacob Forney Young, of Baltimore.
Charles Smith Lewis, of New York City—(extra ordinem). (46)

Proficients in Applied Electricity.

George Edward Bartell, of Baltimore.
William Burke Brady, of Harrisburg, Pa., M. E., Lehigh Univ., 1897.
Edmund Frank, of Petersburg, Ind., S. B., Rose Polytechnic Inst., 1897.
William Schrofield Gorsuch, Jr., of Baltimore.
Richard Cameron Haldeman, of Harrisburg, Pa., A. B., Yale, 1896.
William Lemmon Hodges, of Baltimore.
Ferdinand Brauns Keidel, of Catonsville, Md.
Bertram Motter Kershner, of Emmitsburg, Md.
Charles J. Spencer, of Baltimore. (9)
REPORT CONCERNING THE OFFICIAL STATE BUREAUS CONNECTED WITH THE JOHNS HOPKINS UNIVERSITY.

TO THE PRESIDENT OF THE JOHNS HOPKINS UNIVERSITY:

I submit for your information the following report concerning the Maryland Geological Survey and the Maryland Weather Service during the past year. Much of the work of these bureaus is carried on in cooperation with the Geological Department, and the offices are provided by the University free of all charges to the State.

THE MARYLAND GEOLOGICAL SURVEY.

The Maryland Geological Survey, which was established by the act of the General Assembly of 1896, began operations upon March 25 of that year, when, by the action of the Commission designated by the act, the organization of the Survey was formally effected. The General Assembly of 1898 passed two additional acts, which added largely to the powers of the State Survey Commission by providing for the construction of topographic maps and the investigation of the question of proper highways for the State. By the first act an additional appropriation of $5,000 annually was granted, while the second act appropriated $10,000 annually, the original appropriation of $10,000 annually by the Assembly of 1896 still remaining in force. By these acts the Survey received the very generous appropriation of $25,000 annually.

During the two and a half years that the Survey has been in operation several lines of investigation have been taken up, some of which have already been carried to a conclusion. The preliminary survey of the State, in which general information in regard to the geology and economic resources was secured, placed the Survey in a position to inaugurate those lines of investigation which would prove most beneficial to the people of the State and at the same time would contribute most largely to the sum of knowledge regarding the stratigraphy and structure of Maryland. In connection with this general survey there has been maintained a system of collection of statistical data regarding the output of each industry that has to do with the mineral wealth of the State. Forms are annually placed in the hands of the producers of mineral products, which upon their return are filed at the office of the Survey. In this manner an accurate account is
kept of the mineral products of the State which aggregate in value from six to seven million dollars annually.

The work of the Survey has been systematically divided and a competent man placed in charge of each one of the divisions. Dr. E. B. Mathews, in addition to his duties as Assistant State Geologist, is Chief of the Division of Geology of the Piedmont Plateau; Professor Charles S. Prosser is in charge of the Division of Geology of the Appalachian Region; and Dr. George B. Shattuck is in charge of the Division of the Coastal Plain. The work of the Survey embraces many subjects related to geology, among which is the investigation of our highways, Dr. H. F. Reid being Chief of the important Division of Highways. Dr. L. A. Bauer is in charge of the Division of Terrestrial Magnetism. Several special assistants in charge of independent lines of work are also employed: Mr. A. N. Johnson in Highway Engineering, Dr. Cleveland Abbe, Jr., in Physiography, and Messrs. Basil Solers and B. W. Barton in Botany.

At the same time active co-operation is maintained with several of the Washington bureaus, especially with the U. S. Geological Survey and the bureaus and divisions of the U. S. Department of Agriculture. The aid which has been rendered by the Washington scientific departments has been of great importance to the successful prosecution of the State work.

The topographic work of the Survey has been much extended during the past year, an area of several hundred square miles having been surveyed upon a scale of one mile to an inch in western Allegany and Garrett Counties. The surveying force is provided by the U. S. Geological Survey through a plan of cooperation between the national bureau and the Maryland Geological Survey.

The magnetic work under the charge of Dr. Bauer was continued in the western portion of Maryland. Dr. Bauer completed his work on the western boundary of the State during 1897, and was able to be of great service to the Attorney-General of Maryland, who had the matter in charge. All of the magnetic and astronomical work was placed in charge of Dr. Bauer, and he was throughout recognized as the scientific authority upon the State force. During the summer of 1898 a part of Dr. Bauer's time was taken up in the survey of the boundary line between Allegany and Garrett Counties, which had been authorized by a special act of the last General Assembly. This work, which had been many times unsuccessfully attempted, was satisfactorily accomplished, and a report published in September.

The more strictly geological work of the Survey was carried on by the instructors and students of the Geological Department of the University, with such cooperation as was deemed necessary along special lines. Professor George P. Merrill, of the U. S. National Museum, rendered the Survey a very important service in the conduct of the investigations upon the building and decorative stones of the State. Extensive areal and economic work was conducted both in the western and central counties of the State. Surveys of Allegany and Garrett Counties were completed and a large
amount of data collected for the special economic report which will appear later.

The highway investigations have occupied the attention of the Survey since the spring of the present year, and a considerable force was employed under the direction of Dr. Reid and his associate, Mr. Johnson, in the study of the highway conditions of Maryland. The distribution of those rocks which are adapted for highway construction has been carefully surveyed and points for the subsequent locations of quarries of road metals indicated.

The agricultural conditions of the State have also been considered and a study made of many of the relations of the geological formations to the soils derived from them. This classification of the soils has been conducted under a plan of cooperation with Professor Milton Whitney, of the U. S. Department of Agriculture and the Maryland Experiment Station, and outside of its scientific interest will prove of much practical benefit to the agricultural interests of the State.

The distribution of plant and animal life is so closely connected with the soils and geology that the Survey plans a study of the fauna and flora from this standpoint. Already some work has been done, under the direction of Messrs. Sollers and Barton, upon the botany of Maryland, more particularly in the western counties. It is planned in the future to carry on this work in cooperation with the newly organized State Horticultural Bureau.

Much advance was made during the year in the preparation of the manuscript for subsequent volumes. Professor Merrill completed his work upon the Building and Decorative Stones of Maryland, and Mr. Henry Gannett, of the U. S. Geological Survey, furnished an elaborate treatise upon the Aims and Methods of Topographic work for the report upon the cartography of the State. These and other reports by the regular staff of the Survey are now being collected for the second volume, which will be brought out during the autumn of 1898.

The Maryland Weather Service.

The Maryland Weather Service was established in May, 1891, under the joint auspices of the Johns Hopkins University, the Maryland Agricultural College, and the United States Weather Bureau, and became an official organization by an act of the General Assembly, approved by the Governor April 6, 1892. Under authority granted by this act the Maryland Weather Service was permanently established at the Johns Hopkins University, under the direction of a Board of Control nominated by the heads of the institutions above mentioned and commissioned by the Governor.

During the first five years of the existence of the Service the investigations were confined largely to a study of the general meteorological conditions of the State. Numerous stations were established in the different counties, volunteer observers having been obtained at a sufficient number
of points to render it possible to determine the more important features of the climate of the State. Throughout the same time monthly Meteorological Reports, extending through the year, and weekly Crop Bulletins, covering the growing and harvesting seasons, were published. Two biennial reports to the General Assemblies of 1894 and 1896 were also prepared and subsequently printed with the necessary maps, diagrams, and tables. A series of large Climatic Charts was also published and placed on exhibition in the Maryland Building in Chicago at the time of the Columbian Exposition, and copies of the same were subsequently distributed.

Somewhat over a year ago an entire reorganization of the work of the Maryland Weather Service was effected. It seemed desirable to transfer the accumulation of the general climatic data to the Climate and Crop Service of the Weather Bureau, which is much more fully equipped for carrying on that phase of the work, and to devote the money and energies of the Maryland Weather Service to the study of special problems connected with the climatology of the State. It was thought possible, by conducting the work in close cooperation with the State Geological Survey, the State Agricultural institutions, and the U.S. Department of Agriculture, to take up lines of research that would be of much permanent value to the people of the State. Arrangements were made for the publication of these investigations in a new series of reports which should conform in all particulars to those already adopted for the State Geological Survey. These volumes, for which arrangements have now been perfected, will contain the results of investigations upon the climate of the State, and will include reports upon the physiography, meteorology, medical climatology, agricultural soils, forestry, hydrography, crop conditions, botany, and zoology of Maryland.

The reports upon physiography and meteorology are already largely prepared and will constitute the first volume of the series. Dr. Cleveland Abbe, Jr. has prepared a report upon the physiography, while the longer and more elaborate statement regarding the meteorology of the State is divided into three parts, the general treatment of the subject being from the pen of the distinguished Professor Cleveland Abbe, of the U.S. Weather Bureau; Mr. F. J. Walz, the Local Forecast Official of the U.S. Weather Bureau in Baltimore and the Meteorologist of the State Weather Service, will contribute the part relating to the meteorology of the State; while Mr. O. L. Fussig, his associate, will prepare those chapters which relate to the history of meteorological investigations in Maryland since early colonial days. The cordial support of Professor Willis L. Moore, Chief of the U.S. Weather Bureau, has been secured in this work, as well as in many of the lines of special investigations which will be later pursued.

The investigations of the agricultural soils of the State, already referred to in connection with the State Geological Survey, are closely related to many of the climatological problems which will be considered in the future, and the active cooperation of Professor Whitney along these lines will add much to the effectiveness of the State work. Mr. C. W. Dorsey, of the State
Agricultural Experiment Station, has been carrying on investigations in this field under the supervision of Professor Whitney and the results of their combined work will be later brought out in the reports of the State Weather Service.

The questions of hydrography are closely related to those of climatology, and already considerable progress has been made in the study of the drainage basins of Maryland, through the co-operation secured from Professor Newell, in charge of the Division of Hydrography of the U. S. Geological Survey, and special reports upon this subject will be incorporated in a later volume of the State Weather Service.

The other lines of investigations above referred to have been projected, but little work has been done upon them thus far. They will occupy the attention of the local Service during the coming and subsequent years.

WM. BULLOCK CLARK,
State Geologist and Director State Weather Service.
ABSTRACT OF THE REPORT OF THE LIBRARIAN.

The number of bound volumes in the Library is 85,954. The accessions during the year have amounted to 3427. Of these accessions 1974 were received by gift or in exchange.

The number of pamphlets and unbound volumes received during the year exceeded 5000. The total number of pamphlets in the Library is estimated at 100,000.

The number of serials annually subscribed to is three hundred. Over one thousand serials are also regularly received in exchange.

The principal gifts of the year were:

From Professor Cleveland Abbe, of Washington, his library of meteorological literature, which he has been collecting for over thirty years. These books are to be kept together and to be known as the Abbe Meteorological Library. This collection is considered to be next in importance to that of the U. S. Weather Bureau. It contains 1178 volumes (of which 514 are bound), 37 volumes of charts, and about 1000 pamphlets. Among the important sets are Gehler’s Physikalisches Handwörterbuch (23 vols.), Arago’s Oeuvres Complètes (17 vols.), Jahrbuch der Erfindungen (25 vols.), Repertorium für Meteorologie (24 vols.), L’Aeronaute (23 vols.), Aeronautical Society of Great Britain (23 vols.), American Meteorological Journal (12 vols.); also the official reports and publications of the Meteorological Observatories and Stations in India, Russia, Norway, Germany, Austria-Hungary, Belgium, England, Canada, Argentine Republic, South Africa, Mauritius, and Hong-Kong; besides the publications of the U. S. Weather Bureau, including the daily weather charts since 1871.

The library of the late Dr. Robert Brown Morison, for many years a member of the Hospital staff as Dermatologist, who gave the University his collection of medical books and his surgical instruments. The books number 223 bound volumes and include many dermatological journals and a set of the Hebra-Elbinger Atlas of Skin Diseases, containing 94 large colored plates. These have been deposited in a section of the Medical Library reserved for this collection and the instruments transferred to the Clinical Laboratories.

A set of the Decisions of the United States Supreme Court, presented by Dr. W. W. Willoughby, Associate in Political Science, in memory of his father, Hon. Westel Willoughby, of Washington. The set is complete to
Report of the Librarian.

date, numbering 44 volumes well bound in sheep, and is a most valuable
and timely acquisition to the Library.

Mr. Leopold Strouse, of Baltimore, has added to the Leopold Strouse
Rabbinical Library, maintained by him, 64 bound volumes and 42 pamph-
lets. This includes a complete set of the volumes issued by the Jewish
Publication Society of America.

The following gifts also are worthy of special mention:
From His Majesty, Alexander I, King of Servia, a facsimile reproduction
of an Old Servian Evangeliary preserved since the twelfth century in the
Monastery on Mount Athos.

From the Duc de Loubat, the continuation of the sumptuous work in
folio illustrating the ethnography and archaeology of the American races,
together with a copy of the facsimile of the Borgian Mexican Manuscript;
both works produced through his generosity.

From Mrs. George G. Carey, 203 volumes of Greek and Latin texts.

From President Gilman, a valuable collection of books and pamphlets
relating mainly to municipal administration collected for use in respect to
the Baltimore City Charter.

From Professor Adams, a number of books to be added to the Southern
History Collection, and many other miscellaneous works.

From Mr. W. W. Spence, several volumes of the Jesuit Relations, in
continuation of the previous issues of this series.

From Mrs. Perley Lovejoy, twelve scrap-books containing contemporary
newspaper clippings concerning the Civil War.

From Dr. H. A. Kelly, the so-called "Breeches Bible" and the "Mite
Bible."

From Mr. M. N. Smull, sixty-two volumes of the early issues of Littell's
Living Age.

From the Misses Eaton, of Baltimore, a set of the Works of John Adams,
in ten volumes.

From Mr. W. H. Buckler, the Works of Sir William Jones, in eight quarto
volumes, and the Account of the Earl of Macartney's Embassy to China.

Messrs. Henry Holt & Co., of New York, who for the last twenty years
have generously given to the Library their publications, have continued
their gifts this year.

Noteworthy gifts have likewise been received from the following donors:
Professor Alexander Agassiz, of Harvard, the Bodleian Library. Mr. S.
C. Donaldson, the Dutch Academy of Sciences in Harlem, the Minister of
Public Instruction of France. Dr. S. A. Green, of Boston, Professor Gilder-
sleeve, Dean Griffin, the Hungarian Academy, the Minister of Public
Instruction of Italy, the Museum of La Plata, the Lick Observatory. Mr.
David Lyon, the Maryland Geological Survey, the Minnesota Geological
and Natural History Survey, the Prince of Monaco, Mr. C. B. Moore, the
New York Commissioners of Statutory Revision, Professor Remsen, and
the Russian Palaeontological Society.

A detailed list of gifts to the Library is separately submitted.
The important purchases of the year have been as follows:

A number of works for the Geological Department, including the Publications of the Palaeontographical Society and the Swiss Palaeontological Society, and a set of the Paläontologische Abhandlungen; the Journal of Commerce’s History of Banking, in four large volumes; thirteen additional volumes of the British Rolls Series and Calendar of State Papers; Fraser’s Pausanias, in six volumes; Boase’s Modern English Biography, in three large quarto volumes; Dutripon’s Concordance to the Vulgate; the facsimile reproduction of the newly-found manuscript of Bacchylides; books relating to the German, Dutch, Greek, Latin and Sanskrit languages and literatures, procured at the request of the professors at the head of those departments.

The staff of the General Library consists of Mr. Brandow, in charge of the general reading-room, Mr. Miller, in charge of the periodicals, stack-rooms, etc., a lady in charge of the study-room and of cataloguing, and a boy attendant.

The classical library has been in charge of Dr. C. W. E. Miller, under the supervision of Professor Gildersleeve.

The modern language collection has been in charge of Dr. Keidel and a library attendant, under the supervision of Professor Wood.

The historical collection has been in charge of Miss Daran, under the direction of Professor Adams and Dr. Vincent.

The chemical library has been in charge of Dr. Gilpin, under the direction of Professor Remsen.

The biological library has been in charge of Mr. C. W. Greene and a library attendant, under the direction of Professor Brooks.

The geological library has been in charge of Dr. Mathews, under the supervision of Professor Clark.

The medical library has been in charge of Miss Thies, under the supervision of Professor Hurd.

The astronomical library has been in charge of Dr. Poor.

The physical and mathematical seminary collection has been under the supervision of Dr. Ames.

During the year the New Book Department has purchased 4300 volumes of the estimated value of $6700. Since the opening of this department 94,000 volumes of the estimated value of $147,000 have been exhibited on its shelves.

It gives me pleasure to commend the faithfulness and efficiency with which our force of assistants has looked after the interests of the Library through the year. Our system of special libraries in some respects entails more burdens upon the general staff than are usual where the collections are kept together. Notwithstanding this, the details of management have been carried as well as our limitations of force and expenditure would permit.

N. Murray,
Librarian.

1898, October 1.
The several regular journals have been continued during the year as follows:


Of the American Journal of Mathematics, four numbers, including 390 quarto pages, have been issued. The twentieth yearly volume is now in progress. The series of portraits of distinguished mathematicians was continued in this volume with a portrait of Professor Darboux.

Of the American Chemical Journal, numbers six to ten, completing volume nineteen, and numbers one to seven of volume twenty have appeared. These contain 1012 pages octavo.

Of the American Journal of Philology, numbers three and four of volume eighteen and number one of volume nineteen have been issued. These include 410 pages octavo.

Volume two of the Journal of Experimental Medicine (750 pages and 54 plates) has been completed and five numbers of volume three (548 pages and 41 plates) have appeared.

Of the Modern Language Notes, volume twelve has been completed and six numbers of volume thirteen have appeared.

Of the Contributions to Assyriology, part three (100 pages) completing volume four has been issued.

Numbers 132 to 136 of the University Circulars (including 86 pages, quarto) have appeared during the year.
The Twenty-Second Annual Report of the President was issued in December, 1897, and the Annual Register and the Announcement of the Medical School in May 1898.

The first two parts of volume four of the Memoirs from the Biological Laboratory have been issued. These contain a Memoir on the Cubomedusae (80 pages and 9 plates), by the late Dr. F. S. Conant, published as a memorial by his family, and a Memoir on Synapta Vivipara (38 pages and 5 plates), by Dr. H. L. Clark.

Of the Johns Hopkins Hospital Reports (appearing irregularly) three numbers of volume seven (180 pages octavo) have been issued, and of the Hospital Bulletins (monthly) two numbers completing volume eight and seven numbers of volume nine (248 pages quarto and with numerous illustrations) have appeared.

The reproduction of a unique manuscript of the Kashmirian Atharva-Veda has been undertaken under the direction of Professor Bloomfield. It is expected that the work will be issued during the coming year. The interest shown in this project by Sanskrit scholars throughout the world has been most gratifying. Especially noteworthy has been the generous support given by the governments of India.

There have been received, in accordance with the regulations, one hundred and fifty copies of the theses accepted for the degree of Doctor of Philosophy from the graduates named below:

Alleman, G.—A Further Investigation of Paradiazotoluene Sulphate and the Action of Sulphuric Acid on the Methyl Ether of Paracresol.

Arbuckle, H. B.—A Redetermination of the Atomic Weight of Zinc and Cadmium.

Bagg, R. M.—The Cretaceous Foraminifera of New Jersey.

Belden, H. M.—The Prepositions in, on, to, for, fore and set in Anglo-Saxon Prose.

Bolling, G. M.—The Particle in Hesiod.

Brackett, B. B.—The Effects of Tension and Quality of the Metal upon the Changes in Length produced in Iron Wires by Magnetization.


Campbell, K.—A Study of the Romance of the Seven Sages, with special reference to the Middle English Versions.


Conant, F. S.—The Cubomedusae.

Conklin, E. G.—The Embryology of Crepidula.

Day, W. S.—A Comparison of Rowland's Thermometers with the Paris Standard and a Reduction of his Value of the Mechanical Equivalent of Heat to the Hydrogen Scale.

Dorsey, N. E.—The Surface Tension of Water and of Certain Dilute Aqueous Solutions, Determined by the Method of Ripples.
The Johns Hopkins Press.

Harrison, C. N.—Arc-Spectra of Vanadium, Zirconium and Lanthanum.
Humphreys, W. J.—Changes in the Wave-Frequencies of the Lines of Emission Spectra of Elements, their Dependence upon the Elements themselves and upon the Physical Conditions under which they are Produced.
Johnston, C.—The Epistolary Literature of the Assyrians and Babylonians.
Johnson, D. S.—Development of the Leaf and Sporocarp in Marsilia Quadrisolia, L.
Metcalfe, M. M.—The Eyes and Subneural Gland of Salpa.
Pell, A.—On the Focal Surfaces of the Congruences of Tangents to a given Surface.
Ragland, C. D.—Some Double Halides of Cadmium with the Methylamine and Tetramethylammonium.
Rhoads, E.—The Effect of the Fibrous Structure of Sheet Iron on the Changes in Length accompanying Magnetization.
Schmidt, F. G. G.—Die Rieser Mundart.
Spencer, A. C.—The Geology of Massanutten Mountain in Virginia.
Stoddard, W. B.—A Further Study of the Products Formed by the Action of Heat on Parasulphaminebenzoic Acid.

The system of exchanges has been conducted as in previous years.

N. Murray.
GIFTS TO THE LIBRARY.

ABBE, PROF. CLEVELAND. His library of Meteorological Literature, comprising 1178 volumes and about 1000 pamphlets, together with 37 volumes of charts. (See p. 88.)

Aberdeen, University of. Catalogue of the Officers of Marischal College, and of the University of Aberdeen, 1593-1860. Aberdeen, 1897. O.

Catalogue of Libraries of Marischal and King’s Colleges. Aberdeen, 1897. O.

ADAMS, PROF. H. B. One hundred and four miscellaneous volumes, principally books of “Southern Literature.”

Agassiz, Prof. A. Publications of the Museum of Comparative Zoology at Harvard College for the year.


Alexander, A. (Author.) Theories of the Will. N. Y., 1888. D.

Alexander, W. J. (Editor.) Select Poems of Shelley. Boston, 1898. D.

Austin, J. O. (on behalf of an unnamed donor). Roger Williams Calendar. D.

Avery, S. P. Catalogue of the Ellen Walters Avery Collection of Books. N. Y., 1897. S.

Ball, Sir E. S. (Author.) Two Memoirs on the Theory of Screws. Dublin, 1868 and 1897. F. and Q.

Baltimore City Library. (G. W. McCreary, Librarian). A large collection of the municipal publications of Baltimore.

Barnard, J. M. Philippe Pinel of France. 1898. O.

Barra, Eduardo de la. (Author.) Literatura Arcaica, Estudios criticos. Valparaiso, 1896. D.

Barton, Dr. R. W. Bell, Sir Charles. Animal Mechanics. London. O.

Bashforth, Rev. Francis. (Author.) Mathematical treatise on the Motion of Projectiles. London, 1873. O.

Two other of his publications, 1871 and 1893. O.

Basle, University of. Fifty-seven Academic Publications.

Beloit College. Semi-Centennial Anniversary. Beloit, 1897. O.


Berlin, Royal Library. Catalogues, 1897–8. 3 vols. O.

Berlin, University of. Seventy-two Academic Publications.

Besset, Prof. Charles E. (Author.) The Phylogeny and Taxonomy of Angiospermae. 1897. O.

Blackstone Memorial Library. Exercises at the opening of the Library. New Haven, 1897. Q.

Blackwell, Dr. Elizabeth. (Author.) Scientific Method in Biology. London, 1895. D.

Bliss, C. M. Proceedings of Vermont Historical Society. Montpellier, 1896. O.

Bright, Dr. J. W. Meyer. R. M. Die allgermanische Poesie. Berlin, 1899. O.

Brown, J. S. (Author.) Partisan Politics. Phila., 1897. D.

Brunetière, Prof. F. (Author.) Manuel de l’Histoire de la Littérature Française. Paris, 1898. O.

Bryn Mawr College. Dissertations for the year.


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Gifts to the Library.

Buckley, Dr. L. D. Three of his recent publications.

Vasenius, V. History of Printing in Finland. London, 1898. O.

California, University of. Ten Academic Publications.


Carey, Mrs. George G. Two hundred and three of the Carl Tauchnitz edition of texts of the Greek and Latin authors from the library of Mr. George G. Carey.


Century Co. (Publishers.) Holden, E. S. Primer of Heraldry for Americans. N.Y., 1888. D.

Channing, Walter. Four of his recent publications. Boston, 1897-8. O.

Charleston (S. C.), Mayor of. (Hon. J. Adger Smyth.) Year Book of Charleston for 1897.

Chicago University. Academic Publications for the year.

Christiania, Royal University of Norway. Fourteen Academic Publications.

Claus, Judge Walter. (Author.) Addresses and Articles. Raleigh, 1897. O.

Clayton, H. H. (Author.) Two Meteorological Papers. 1898.


Colles, Dr. J. A. Cole, A. The Life and Teachings of our Lord in Verse. N.Y., 1883. O.


Columbia University. Stanton, T. W. Lower Cretaceous Formations and Faunas of the U.S. 1897. O.


Cornell University Library. Twenty Academic Publications.

Catalogue of the Dante Collection presented by W. Fiske, I. Ithaca, 1898. Q.

Memorial Exercises in honor of Henry Williams Sibley. Ithaca, 1898. Q.


Cutler, E. (Author.) Three recent publications.

DeFenw, Hon. Chauncy M. (Author.) Four Days at the Republican Convention at St. Louis. 1896. O.

Dewey, D. B. (Author.) Bank Credits. [Chicago]. D.

Dodge, W. E. Strong, J. The Twentieth Century City. N.Y., 1898. D.

Donaldson, S. C. Catulli, Tibulli et Propertii Opera. Birminghamiae, typis J. Baskerville, 1772. Q.


Voltaire. Œuvres complètes. Paris, 1833. 4 vols. O.


Lucas, N. I. Deutsch-Englisches Wörterbuch. 2 vols. 1898. Q.

Dotterer, H. S. (Author.) Whitmarsh Reformed Congregation in the Holland Archives, 1897. O.

Dresser, H. W. (Author.) In Search of a Soul. Boston, 1897. O.

Durham, C. B. Durham, J. S. To Teach the Negro History. Phila., 1897. O.


Gifts to the Library.


Engel, Edward. (Author.) Geschichte der nordamerikanischen Litteratur. Leipzig, 1897. D.

William Shakespeare. 2d ed. Leipzig, 1897. D.

Equitable Publishing Company. Willey, F. O. The Laborer and the Capitalist. N. Y. [1896]. O.

Erlangen, University of. Three hundred and thirty-eight Academic Publications.

Farlow, Prof. W. G. (Author.) The Conception of Species. Boston, 1898. O.

Field Columbian Museum. Publications for the year.

Fitzpatrick, Prof. T. J. (Author.) Ferns of Iowa and their Allies. O.

Foote, A. R. Cost of Service to Users and Tax Payers. Takoma Park, 1897. O.

Founders and Patriots of America, Order of. Winslow, J. The Battle of Lexington. N. Y., 1897. O.

France, Minister of Public Instruction. Chartularium Universitatis Parisiensis. Tomus IV. Paris, 1897. F.


Frazer, D. P. (Author.) Geological Excursion from Moscow to Siberia and Return. 1897. O.

Freiburg, University of. One hundred and fifteen Academic Publications.

Friedenwald, H. (Author.) Journals and Papers of the Continental Congress. Phila., 1898. Q.


Gerhard, W. P. (Author.) Sanitary Engineering. N. Y., 1898. D.

Giessen, University of. Seventy-four Academic Publications.

Gildersleeve, Prof. B. L. Conway, R. S. (Editor). The Italic Dialects. Cambridge, 1897. 2 vols. O.


Cook, A. S. (Editor.) Biblical Quotations in Old English Prose Writers. London, 1898. O.

Gilman, Pres. D. C. Twenty-eight volumes and thirty-two pamphlets mainly relating to City Government.

Gins and Company. Several of their recent publications.


Glass, D. W. James Fead's engraving of Shakespeare and his Friends.

Glenn, G. B. Report of the State School Commissioner of Georgia for 1895-96. Atlanta, 1897. O.

Glenn, John M. Queenay, F. Tableau Economique. London, 1894. Q.


Göteborg City Library. Arskrift. Göteborg, 1897. O.

Goyo, Dr. Sefitaro. (Editor.) Annotationes Zoologischeae Japonesae. Tokyo, 1898. O.

Göttingen, University of. One hundred and eight Academic Publications.

Grady, U. S. (Author.) Geology of the Mesabi Iron Range in Minnesota. 1898. O.

Laker with two outlets in Northeastern Minnesota. 1897. O.


Green, Dr. Samuel A. Twenty-seven miscellaneous publications mainly relating to Massachusetts.

Green, S. S. (Author.) The Use of Pictures in Libraries. Boston, 1898. O.

Griepenwald, University of. One hundred and three Academic Publications.

Griffin, Dr. E. H. Küpe, O. Introduction to Philosophy. London, 1897. D.


Seth, J. A Study of Ethical Principles. N. Y., 1894. O.

Guernsey, R. S. (Author.) Taxation and its Relations to Capital and Labor. N. Y., 1897. O.

Guthrie, K. S. Three of his recent publications.
Gifts to the Library.

HALSBURTON, R. G. (Author.) How a Race of Pygmies was found in North Africa and Spain. Toronto, 1897. Q.

HALL, REV. C. C. Inauguration as President of Union Theological Seminary. N. Y., 1898. O.

HALL, DR. VERNON J. (Author.) A Study of Zinc Hydroxide in Precipitation. 1897. O.

HARLEM: SOCIÉTÉ HOLLANDAISE DES SCIENCES. Oeuvres complètes de Christian Huygens, Vol. VII. Le Haye, 1897. Q.

HARVARD COLLEGE: ASTRONOMICAL OBSERVATORY. Annals. Cambridge, 1897. 2 vols. Q.

HAUSSMANN, W. A. (Translator.) Nietzsche, F. Genealogy of Morals. N. Y., 1897. D.

HAWAII, MINISTER OF FINANCE. Departmental Reports of the Republic of Hawaii. Honolulu, 1898. 9 vols. O.


HEIDELBERG, UNIVERSITY OF. One hundred and thirty Academical Publications.

HEIMWEH, JEAN. (Author.) La Parole soit à l'Alsace-Lorraine. Paris, 1897. S.

HEMMETER, J. C. (Author.) Experimental Basis of the Treatment of Hyperacidity, etc. Chicago, 1897. D.

Diseases of the Stomach. Phila., 1897. O.

HOERN, A. & Co. (Publishers.) Souvenir of Baltimore, 1898. D.

HOFFMANN, REV. E. A. Catalogue of the General Theological Seminary. N. Y., 1897. O.

HOLT, HENRY & Co. Their publications for the year.

HUCKE, J. (Author.) Die Geld-Verrichtungen. Berlin, 1897. O.

HUGGINS, SIR W. (Author.) The New Astronomy. O.

HUMPHREY, MRS. J. E. Zimmermann, A. Botanical Microtechnique, translated from the German by J. E. Humphrey. N. Y., 1893. O.

HUNT, DR. REID. (Author.) Hunt, R. and Harrington, D. W. Physiology of the Cardiac Nerves of the Opossum. 1897. Q.

Physiology of the Cardiac Nerves of the Calf. 1897. Q.

INDIA, GEOLOGICAL SURVEY. Their publications for the year.

INDIAN RIGHTS ASSOCIATION. Fifteenth Annual Report, 1897. Phila., 1898. O.

LEUPP, F. E. A Summer Tour among the Indians of the Southwest. Phila., 1897. O.

INGALLS, MAJ. J. M. (Author.) Catalogue of Professional Works and Papers. Fort Monroe, 1898. O.

IOWA HISTORICAL SOCIETY. First Census of the Original Counties of Dubuque and Des Moines, ed. B. F. Shambaugh. Des Moines, 1897. O.

ITALY, MINISTER OF PUBLIC INSTRUCTION. Opere di Galileo Galilei, Vol. 7. Firenze, 1897. Q.

JAPAN, IMPERIAL UNIVERSITY OF. Catalogue of the Library of the Teikoku Daigaku, Part I. Tokyo, 1896. Q.

KELLY, DR. H. A. A copy of the "Breeches Bible," printed by Christopher Barker. London, 1673. O.

Also the miniature reproduction of the Holy Scriptures known as the "Mite Bible."

KERNLER, F. (Author.) Die Möglichkeit einer experimentellen Entscheidung zwischen den verschiedenen elektrodynamischen Grundgesetzen. Budapest, 1898. O.

KIEL, UNIVERSITY OF. Eighty-nine Academical Publications.

KING, W. C. Tenney, E. P. Our Elder Brother. Springfield, 1897. O.

KÖNIGSBERG, UNIVERSITY OF. Fifty Academical Publications.


LANGLEY, PROF. S. P. Goode, G. B. (Editor.) The Smithsonian Institution, 1846-1896. Washington, 1897. Q.

(Author.) The Astrophysical Observatory. Washington, 1897. Q.
Gifts to the Library.

La Plata, Musée de. Limites Occidentales de la République Argentine, por Enrique S. Delachaux. Reconnaissance de la Région Andine de la République Argentine, I. F. F. Moreno. La Plata, 1898. Q.

Annales du Musée de La Plata. Anthropologie, II. La Plata, 1897. F.

Two other publications of the Museum.

Lazzeri, Dr. G. (Author.) Trattato di Geometria Analitica. Livorno, 1893. O.

Leipsic, University of. One hundred and nineteen Academic Publications.

Lemcke and Buechner. Meyer's Kalender, 1938. Leipzig [1897]. O.

Lemoine, E. Three of his recent publications. Paris. O.

levasseur, E. (Author.) De l'État présent et prochain de l'Ouvrier Américain. Paris, 1897. O.

LEYDEN, University of. Catalogue des Livres Chinois. Leide, 1883-86. O.


Lieb, Gen. G. N. (Author.) Army Regulations and Executive Regulations in General Washington, 1898. O.

Lise, University of. Five Academic Publications.

Liverpool Biological Society. Proceedings and Transactions, Vol. II. Liverpool, 1897. O.


Il Manoscrito Messicano Borgiano (fascimile). Roma, 1888. O.

Louvain, University of. Academic Publications for the year.

Lovejoy, Mrs. Perley. Twelve scrap-books with clippings relating to the Civil War, two Topographical Atlases, and six miscellaneous volumes.


Lund, University of. Eleven Academic Publications.

lyman, B. S. Four of his recent publications. 1897. O.

Lyon, D. Wall Map of Baltimore and Vicinity, by W. A. Flamm. 1897.

Lyon, University of. One hundred and fifty-seven Academic Publications.

MacDonal, Mrs. W. L. (From the library of Dr. F. S. Conant, late Bruce Fellow.) Korschelt, E. and Helder, K. Lehrbuch der vergleichenden Entwicklungs geschichte der wirbellosen Thiere. 3 vols. in 2. Jena, 1890-93. O.

McGill University. Catalogue of Graduates to 1897. Montreal, 1897. O.

McSherry, R. M. (Author.) National Medals of the United States, and Essays and Addresses. Baltimore, 1897. O.

Magoun, Prof. H. W. (Author.) The Early Religion of the Hindus. O.

Mancini, Prof. D. (Translator) Shelley, Epipsychidion. 1897. D.

Orazio, Odil, epistole, satire. 1897. D.


Massachusetts Institute of Technology. Meetings held in Commemoration of the Life and Services of Francis Amasa Walker. Boston, 1897. O.


Massachusetts, State Board of Health. Annual Report. Boston, 1897. O.

Epidemic Cerebro-spinal Meningitis and its relation to other forms of Meningitis. Boston, 1898. O.

Massachusetts, State Library. Bibliography of Works on Taxation. 1898. O.

Gifts to the Library.

**MICHIGAN STATE LIBRARY.** Michigan Pioneer and Historical Collections. Vol. XXV-XXVII. 1897-8. 3 vols. O.

Reports of the Board of Agriculture. Lansing, 1857-96. 20 vols. O.

**MICHIGAN UNIVERSITY LIBRARY.** Academic Publications for the year.

**MINNESOTA GEOLOGICAL AND NATURAL HISTORY SURVEY.** (Prof. C. MacMillan.) Minnesota Botanical Studies, Vol. I. Minneapolis, 1898. O.

**MISSOURI BOTANICAL GARDEN.** (Prof. W. Trelease.) Ninth Annual Report. St. Louis, 1898. O.

**MONACO, S. A. S. LE PRINCE ALBERT I. DE.** (Author.) Sur les Observatoires Météorologiques de l'Océan Atlantique. 1888. Q.

Sur la quatrième Campagne de la Princesse-Alice. 1898. Q.

Sur le Développement des Tortues (T. caretta). 1898. O.

**MONTPELLIER, UNIVERSITY OF.** Ninety-seven Academic Publications.

**MOORE, C. B.** (Author.) Certain Aboriginal Mounds of the Georgia Coast. Phila., 1897. F.

Certain Aboriginal Mounds of South Carolina. Phila., 1898. F.

Certain Sand Mounds of Duval County, Florida. Phila., 1895. F.

**MORISON, DR. ROBERT B.** His Medical Library and Medical Instruments. The collection of books received includes 223 bound volumes. (See p. 88.)

**MULLINS, DR. G. L.** (Author.) Tuberculosis and the Public Health. Sydney, 1898. D.

**MÜLLER, UNIVERSITY OF.** Seventeen Academic Publications.

**MURRAY, T. H. Linehan, J. C. and Murray, T. H.** Irish Schoolmasters in the American Colonies. Washington, 1898. O.

**MUSÉE SOCIAL, PARIS.** La Prévoyance Sociale en Italie. Paris, 1898. D.

**MUSSE-ARNOLY, W.** (Author.) Theological and Semitic Literature, a bibliographical supplement. 1900. O.

**MUSSE, DR. J. H.** (Author.) Six of his recent publications. O.

**NANCY, UNIVERSITY OF.** Forty-one Academic Publications.

**NAPLES: ROYAL ORIENTAL INSTITUTE.** Grammatica Indestana o Urdũ del Prof. Tagliabu, Vol. II. Roma, 1896. O.


**NEW HAMPSHIRE, STATE LIBRARY.** Current Official State Documents. 5 vols. O.

**NEW JERSEY, BUREAU OF STATISTICS.** Annual Report for 1897. O.

**NEW JERSEY, GEOLOGICAL SURVEY.** Annual Report of the State Geologist for 1897. O.

**NEW MEXICO, DEPARTMENT OF THE INTERIOR.** Compiled Laws of New Mexico, 1897. Santa Fe, 1897. Q.


**MINERAL RESOURCES.** Nos. 1 and 2. Sydney, 1898. O.

**NEW SOUTH WALES BOARD FOR INTERNATIONAL EXCHANGES.** Historical Records of New South Wales, Vols. IV and V. Sydney, 1896-97. O.

**NEW YORK STATE LIBRARY.** Official State Documents for the year.

**UNIVERSITY REPORTS AND BULLETINS.**

**NORWEGIAN ACADEMY.** Skrifter, 1896. Tromsdjem, 1897. O.

**ONTARIO, BUREAU OF INDUSTRIES.** Annual Report for 1896. O.

**ONTARIO, MINISTRY OF EDUCATION.** Documentary History of Education in Upper Canada, Vol. V. Toronto, 1897. O.

**ORMOND, PROF. A. T.** (Editor.) Princeton Contributions to Philosophy. Princeton, 1889. O.

**PADUA, UNIVERSITY OF.** Annuario. Padua, 1898. Q.

**PALMER, MRS. C. F.** Palmer, C. F. Inebriety, its Source, Prevention and Cure. N.Y., 1898. D.

**PARIS, UNIVERSITY OF.** Six hundred and forty Academic Publications.

**PARIS, UNIVERSITY OF, FACULTÉ DE DROIT.** One hundred and thirty-seven Academic Publications.

**PARRIS, J. R. AND OTHERS.** Memorial of Robert McCormick. Chicago, 1885. O.
Gifts to the Library.


Phillips, G. M. (Compiler.) Historic Letters from the Collection of the West Chester State Normal School. Phila., 1898. O.


Pisa, University of. Annuario. Pisa, 1898. O.


Potsdam, Astrophysikalischos Observatorium. Publications for the year.

Powell, Dr. A. H. A map of Greater New York, in two sheets, and a Bird’s-eye View of Brooklyn.

Power, Dr. E. S. Sazinsky, T. S. Medical Symbolism. Phila., 1891. D.

Prince, Dr. J. D. (Author.) The Passamaquoddy Wampum Records. O.

Queensland, Department of Agriculture. Queensland Agricultural Journal. 1898. O.

Rank, S. H. (Author.) Need of Additional Copyright Depositories. Baltimore, 1898. D.

Franklin and Marshall Obituary Record, No. 2

Raper, C. L. (Author.) The Church and Private Schools of North Carolina. Greensboro, 1898. O.

Rea, G. B. (Author.) Facts and Fakes about Cuba. N. Y., 1897. D.

Remsen, Prof. F. A. Nineteen volumes of chemical publications.


San Fernando Observatory. Almanaque Nautico. San Fernando, 1897. O.

Schmeckebier, L. F. Municipal Reports of the City of Chicago. 1895-96. O.

Sellers, E. J. (Author.) Captain John Avery. Phila., 1898. O.

Sheffield, University College. Papers printed to Commemorate the Incorporation of the University of Sheffield. 1897. O.

Shefloe, Dr. J. S. Det Norske Luther College, 1861-67, af Gisle Bothne. Decorah (Iowa), 1897. O.

Sheldon, W. L. (Author.) An Ethical Movement. N. Y., 1896. D.

Sioussat, St. G. L. Laws of the General Assembly of Pennsylvania. Harrisburg, 1897. O.

Slack, Dr. H. R. (Author.) Blue Pyroktinin in the Treatment of Inoperable Malignant Growths. Chicago, 1897. D.

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Gifts to the Library.

Baltimore Health Department; Baltimore Hospital for Crippled and Deformed Children; Baltimore Sewerage Commission; Bellevue Hospital (Society of Alumni); Bodleian Library; Boston Board of Overseers of the Poor; Boston City Hospital; Boston Health Board; Boston Museum of Fine Arts; Boston Public Library; Boston School Committee; Bowdoin College; Brooklyn Library; Buffalo Historical Society; Buffalo Public Library; Buffalo University Club; Cambridge (England) University Library; Cambridge (Mass.) Public Library; Cambridge (Mass.) City Clerk; Carnegie Free Library; Catania, University of; Central Conference of American Rabbis; Cincinnati Chamber of Commerce; Cincinnati Public Library; Coimbra, University of; Columbus Public School Library; Congress of American Physicians and Surgeons; Connecticut Agricultural Experiment Station; Connecticut Bureau of Labor Statistics; Enoch Pratt Free Library; Edinburgh University; Fairmount Park Art Association; Finland, Geological Commission; Forbes Library; Franklin and Marshall College; Glasgow University; Harvard University; Illinois Bureau of Labor Statistics; Illinois State Dental Society; Indiana Geological Survey; Indiana State Medical Society; Iowa Masonic Library; Jersey City Free Public Library; Jewish Foster Home (Philadelphia); John Crear Library; Kansas Academy of Science; Los Angeles Public Library; Maryland Hospital for the Insane; Maryland Lunacy Commission; Maryland School for the Deaf and Dumb; Maryland Historical Society; Maryland State Board of Education; Maryland State Bureau of Immigration; Massachusetts Agricultural College; Massachusetts Board of Education; Massachusetts Board of Gas and Electric Light Commissioners; Massachusetts Board of Railroad Commissioners; Massachusetts Bureau of Statistics of Labor; Massachusetts Committee on Street Railways; Melbourne, University of; Metropolitan Museum of Art (New York); Metropolitan Water Board (Boston); Michigan Bureau of Labor Statistics; Milwaukee Board of City Service Commissioners; Milwaukee Public Museum; Minneapolis Board of Park Commissioners; Montana, University of; Newark Free Public Library; New Bedford Free Public Library; Newberry Library; Newton Free Library; New South Wales Department of Mines and Agriculture; New York City Board of Education; New York City Club; New York Free Circulating Library; New York Mercantile Library; New York Society of Mechanics and Tradesmen; New York State Bureau of Labor Statistics; New York State Charities Aid Association; New York State Reformatory; New York Young Men's Christian Association; Northwestern University; Nova Scotia Legislative Library; Oberlin College Library; Ohio Board of State Charities; Ontario Department of Agriculture; Peabody Museum (Cambridge, Mass.); Pennsylvania Board of Public Charities; Pennsylvania Superintendent of Public Instruction; Perkins Institution; Philadelphia College of Physicians; Philadelphia Commercial Museum; Philadelphia Free Library; Philadelphia Library Company; Philadelphia Mercantile Library; Philadelphia Yearly Meeting of Friends; Princeton Theological Seminary; Providence Athenaeum; Providence Public Library; Queen's College (Belfast); Queen's College (Galway); Rhode Island Bureau of Industrial Statistics; Rhode Island State Auditor; Salem Public Library; San Francisco Board of Supervisors; Sierra Club; Society of Comparative Legislation (London); St. Andrews University; St. Louis Free Public Library; St. Louis Mercantile Library; St. Louis Merchants' Exchange; Storrs Agricultural Experiment Station; Stuttgart Royal School of Technology; Syracuse Central Library; Toronto, University of; Tufts College; Union of American Hebrew Congregations; University Settlement Society of New York; Warren Free Public Library; Wellesley College; Wisconsin State Treasurer; Worcester Free Public Library; Yale University.

The University is indebted, as in previous years, for many and valuable gifts from the several governmental departments in Washington.
REPORT OF THE DEAN OF THE MEDICAL SCHOOL.

TO THE PRESIDENT OF THE UNIVERSITY:

SIR:—The Medical Department of the University was opened in October, 1893, with only the first year of the course organized, with a teaching staff of fifteen, and with an entering class of students numbering eighteen. In October, 1896, the organization of the entire four years' course was completed and in June, 1897, the first class of fifteen students was graduated. During the last academic year, 167 students have been enrolled as candidates for the degree of Doctor of Medicine, 26 in the fourth year, 34 in the third, 44 in the second, and 63 in the first. All of these are college graduates, and before admission spent a year or more in the study of chemistry, physics and biology. The graduating class in June, 1898, numbered 22. In addition, 69 physicians have been in attendance upon special courses or have engaged in research, making a total attendance of 236. The teaching staff numbered 53, of whom 21 are professors, clinical professors or associate professors. The steady growth of the Medical Department with each succeeding year has, therefore, been most gratifying and has laid to rest the fears, which some at first entertained, that our high standard of admission, necessitating not only a degree in arts or science, but also a good practical training in physics, chemistry and biology, with a reading knowledge of French and German, and acquaintance with Latin, would restrict unduly the number of students.

Not less significant is the national character of this Medical School as shown by the distribution of the students among the several States. 30 are credited to Maryland, but of these a number have made this their home only since entrance into the School. Of the remainder, 32 come from New England, 22 from the Middle States, 27 from the Southern, 38 from the Middle West or Central States, 13 from the West (11 being from California), and 5 from Canada, Hawaii and India.

47 colleges are represented, the Johns Hopkins University by 31 students, Yale by 29, Harvard and the University of Wisconsin by 9 each, Wellesley and Smith by 7 each, the Leland Stanford Jr. University and the University of California by 6 each, and Princeton, Williams, Amherst, Vassar, Bryn Mawr, Cornell, the University of Chicago and other colleges by smaller numbers.
But more significant than the growth of the School in numbers or the wide area from which the students are drawn are the contributions to the advancement of medical education in this country which we may fairly claim to have made. The mere addition of a new medical school to an already overburdened list can hardly be regarded as a meritorious act. We have realized from the start that unless we had something to contribute to the promotion of medical education and knowledge, there was no reason for our existence. No one familiar with the conditions of medical education in this country could fail to see that the opportunity existed to do for medical education what this University has accomplished for university education in this country. With the inspiration of such an example and with these high ideals before us, what better place could be found for such a work than in this University and in the city of Baltimore?

We have raised the requirement as to the training preliminary to the study of medicine to a point not only beyond that of any other medical school in this country, which in view of the former low demands in this respect might not signify much, but to one equal to, if not in advance of, that of any foreign university. This high standard of admission, instead of proving a weakness, has been one of the main sources of our strength. It has secured for us students whose average fitness for the study and practice of medicine is unquestionably greater than has been hitherto attained in medical schools of this country, and it has brought to us not a few of unusual capacity and promise. Students are attracted to an institution where their associations are wholly with liberally educated classmates, and the resulting tone and morale of the School are elevated, in welcome contrast to the traditional conception of the social and moral atmosphere of a medical school. It is evident that far better methods of teaching and better results can be secured with highly trained students than with those without adequate preparation.

While we designate our required period of medical study as four years, it is in reality from five to six years, for we relegate to the period of preliminary collegiate training the study of general chemistry, physics and biology, which are included in the medical curriculum of many schools, especially in Europe. The study of these sciences, which is justly considered to be an essential part of a thorough medical education, can be pursued to greater advantage in a college or university than in a medical school, and the arrangement which we have adopted adjusts itself readily to the existing conditions in our best colleges and universities.

Coming to us with this exceptional training, our students have a right to expect exceptional advantages for the study of the profession which they have chosen, and so far as our resources permit we have endeavored not to disappoint them in this respect. The aim of the School is primarily to train practitioners well grounded in the fundamental medical sciences and in practical medicine and surgery and their branches. We have broken completely with the old idea that reading books and listening to lectures is an
adequate training for those who are to assume the responsible duties of practitioners of medicine. Anatomy, physiology, physiological chemistry, pathology, bacteriology, pharmacology and toxicology are taught during the first two years by practical work in the laboratory, and in the last two years disease is studied in the dispensary and at the bedside, not merely as it is described in books.

At the beginning we had only one laboratory building; in 1894 we were provided with a second commodious building, the Women's Fund Memorial building, intended for the various anatomical sciences; in 1896, through a generous gift to the Hospital we were enabled to construct the Clinical Laboratory; and in January, 1899, a still larger building, now in process of erection, will be ready for the laboratories of physiology, physiological chemistry, and pharmacology. We shall then be well equipped with the needed laboratories, which constitute the workshops of our students during the first two years of the course.

From these laboratories the students pass at the beginning of the third year directly to the Dispensary and the wards of the Hospital, where the arrangements to enable them to become practically familiar with the symptoms, the diagnosis and the treatment of disease constitute perhaps our most original and valuable contribution to the methods of teaching medicine. The generous co-operation of the Trustees of the Johns Hopkins Hospital, in accordance with the wishes of its founder, in rendering available for the instruction of students the resources of this great institution, has placed it in our power to make the years devoted to the training in the practical branches of medicine and surgery peculiarly attractive and efficient. They also provide for a large number of our graduates, as well as for others, opportunities to serve as interns in the Hospital.

The advantages of thus coming throughout the entire course into direct personal contact with the objects of study are not merely that the students thereby acquire a more useful and living knowledge of them, but that they become familiar with scientific methods and acquire something of the scientific spirit of investigation and of approaching medical problems. They should thus be enabled by their subsequent observations and experience to carry on an education, only begun at the medical school, and which should continue throughout their professional lives.

To obtain the best results of practical training of the kind mentioned it is of importance that the student should be brought into contact with those who are not merely teachers but also investigators. In the selection of heads of departments the Trustees of the University and of the Hospital have kept in view that a great medical School should not only teach medicine, but also advance the medical science and art. We feel that we may take just pride in the number and value of the published contributions to medical knowledge by members of the staff of the School and Hospital; and, indeed, it is a sign of great promise that several of our students have already conducted noteworthy investigations, leading in some instances to important discoveries.
In a school with such standards for preliminary training and with such opportunities and methods of study, it is self-evident that the standard of attainment should also be kept high, so that the bestowal of its diploma may be a real distinction to such as attain it. In this respect the Faculty have felt a serious sense of responsibility, directed solely by the desire that no one shall be promoted to the doctorate of medicine in this University who does not measure up to the high standards which have here been set.

We feel that we have an unrivaled opportunity for the development of a great medical school, devoted to higher education and the advancement of medicine. The time is one of marvellous activity and progress in medicine, with new paths and new vistas constantly opening for exploration. We cannot occupy the vast field so fully as we desire. We need ampler resources to take full advantage of our opportunities. There is no direction in which pecuniary investments for education will yield larger returns in advancement of knowledge and promotion of the welfare of mankind than in the endowment of higher medical education.

Medical departments of universities in this country have usually been such in name only, and at best have been looked upon as step-children, out of harmony with true university life and ideals. A medical department which brings to the University only liberally educated men and women, provides a four years' course of study conducted with the best methods, cherishes the scientific spirit and contributes to the advancement of knowledge, is surely a worthy member of a university, however high its ideals. The medical department which has here been founded has been cordially received by this University as equal and coordinate with its philosophical department. This intimate union of Medical School and University is of mutual benefit, and in this close association we find constant encouragement and incentive to attain the best. We have been guided throughout by the unceasing care and wise direction of the President of this University, and we believe that the enlightened and generous policy of the Trustees of the University and the Hospital has brought to fulfillment the wishes of the founder of this University and of the Hospital concerning the Medical School for which he provided.

Respectfully yours,

WILLIAM H. WELCH,
Dean of the Medical School.
In Memoriam.

JOSEPH P. ELLIOTT.

The following minute and resolution in memory of Mr. Elliott were adopted by the Trustees, February 7, 1898:

The Board of Trustees of the Johns Hopkins University have heard with great sorrow of the death, on January 14, 1898, of Joseph P. Elliott, who for nearly seventeen years was a member of this Board, having been elected thereto February 7, 1881. Faithful to duty, diligent in business, friendly to the needy, courteous and considerate to all, his death deprives the University of a valued friend and adviser, and the community of a useful and respected citizen.

Resolved, That the President of the Board be requested to communicate to Mr. Elliott's wife and brother an expression of the respect which his former colleagues entertain for his upright and honorable character, and to assure them of the sympathy of the Board of Trustees.

DR. ALAN P. SMITH.

The following minute commemorating of Dr. Smith was adopted by the Trustees, November 7, 1898:

Dr. Alan P. Smith, who had been a Trustee of the Johns Hopkins Hospital since 1873 (so designated by the founder), and of the Johns Hopkins University since 1881, died at his residence in Baltimore, July 18, 1898, in his fiftieth year. During the latter part of his life he was an invalid, and was thus prevented from attending the meetings of the Trustees—but he retained his interest in the work of both foundations, and was always ready to give a word of encouragement and appreciation to those who were more actively engaged than he in the duties of administration and government.

Dr. Smith came of a family which has included many eminent practitioners of medicine and surgery. His father was Dr. Nathan Ryno Smith, for half a century a distinguished surgeon of Baltimore, and Professor of Surgery in the University of Maryland until his death in 1877. His
In Memoriam.

grandfather was Dr. Nathan Smith, who is renowned as the founder of the Medical School of Yale College, and, previously, of the Medical School of Dartmouth College. Among the descendants of this remarkable man who have been devoted to the profession of medicine, are three brothers of Dr. Alan P. Smith, viz., Dr. Berwick B. Smith, who was regarded as a brilliant surgeon and an excellent teacher, and who was demonstrator of Anatomy in the University of Maryland; Dr. Nathan Smith; and Dr. Walter P. Smith, who was a surgeon in the Confederate Army at the time of his death; and, besides, Dr. Nathan S. Lincoln, a distinguished practitioner of Washington, Dr. David Paige Smith, Professor of Medicine, and later of Surgery, in Yale College, Dr. Samuel Theobald, now Clinical Professor in the Johns Hopkins Medical School, Dr. Berwick B. Lanier, lately a member of the Surgical Staff of the Johns Hopkins Dispensary, and two sons of Dr. Alan P. Smith,—Drs. Nathan R. and Walter P. Smith.

In 1873 Dr. Alan P. Smith was elected to the chair of Operative Surgery in the University of Maryland, where he had previously been, for a short time, an adjunct professor; but he had no predilection for the duties of a lecturer or teacher, and he soon sought release from them. He was skillful as an operator and as a clinical adviser, and he preferred to cultivate these talents exclusively. Still, he made contributions to the science of medicine, the most important being a report, in 1878, upon fifty-two cases in which he had performed the important operation of lithotomy without the loss of a single life. In the capacity of a visiting or consulting surgeon, he was connected with several of the most important hospitals of Baltimore. His distinction extended far beyond the city of his residence, and largely rested upon his success in surgery, especially lithotomy, although he was also widely known as a general practitioner. For his gentleness, sympathy, courage, knowledge and skill he was regarded and beloved by all classes in the community,—particularly by the poor, whom he was always ready to befriend and assist, and by his professional associates who constantly consulted him.

His career exemplifies in a remarkable manner the advantages of talents, inheritance, and opportunity, and his name will always be remembered with honor among the surgeons of Maryland.

It was ordered that a copy of this minute be sent to the family of Dr. Smith.
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TRUSTEES.
1899.

President:
C. MORTON STEWART.

Treasurer:
FRANCIS WHITE.

Secretary:
LEWIS N. HOPKINS.

Members of the Board:

LEWIS N. HOPKINS, FRANCIS WHITE, C. MORTON STEWART, J. HALL PLEASANTS, JAMES L. McLANE, W. GRAHAM BOWDOIN,
THE PRESIDENT OF THE UNIVERSITY, ex officio.

COMMITTEES.

Executive Committee:

JAMES L. McLANE, FRANCIS WHITE, ARTHUR GEORGE BROWN, THE PRESIDENT OF THE UNIVERSITY, ex officio.

Finance Committee:

FRANCIS WHITE, W. GRAHAM BOWDOIN, C. MORTON STEWART, ex officio.

Building Committee:

J. HALL PLEASANTS, JAMES L. McLANE, WILLIAM T. DIXON, LEWIS N. HOPKINS, RICHARD M. VENABLE, C. MORTON STEWART, ex officio.
REPORT.

TO THE TRUSTEES OF THE JOHNS HOPKINS UNIVERSITY:—

Gentlemen:

In presenting my twenty-fourth Annual Report, it gives me pleasure to record a year of successful progress. The generous aid of the State, gratefully acknowledged last year,* and the continued contributions of the citizens of Baltimore, have enabled the University to pursue the even tenor of its ways and to keep up its activity in all those departments of higher education which are within its scope. The lamentable reduction of the capital of the University, by circumstances which are too well known to require recapitulation, has given us anxiety as to the future; but day by day, and month by month, the work of education has gone on without interruption. The litigation which was in progress a year ago, has been concluded by a settlement of the claims of the University, which leaves our permanent income from the endowment given by the founder, seriously impaired. To the support of the public, the University must henceforth look. For generous marks of appreciation, frequently manifested, and for the larger and smaller gifts that have come to the University, our grateful acknowledgments are due.

*See the Annual Report for 1898.
The academic staff numbered during the year one hundred and twenty-eight teachers, including forty-six professors and instructors in the Johns Hopkins Medical School. The number of students enrolled was six hundred and forty-nine, of whom two hundred and seventy-seven were residents of Maryland, three hundred and fifty-two came here from thirty-nine other States of the Union, and twenty from foreign countries. Among the students were four hundred and sixty-two already graduated, two hundred and ten of whom were enrolled in the department of Philosophy and the Arts, two hundred and fifty-two in the Medical Department. They came from one hundred and sixty colleges and universities. There were one hundred and sixty-three matriculates (or candidates for the degree of Bachelor of Arts), and twenty-four were admitted as special students, to pursue courses of study for which they seemed fitted, without reference to graduation. The degree of Bachelor of Arts was conferred upon forty-one candidates, the degree of Doctor of Medicine upon thirty-two, and forty-two were promoted to the degree of Doctor of Philosophy. Certificates of proficiency in applied electricity were awarded to five candidates.

The following statistics have been prepared, as in former years, by the Registrar, Mr. T. R. Ball. The first table indicates the enrollment of students in each year since the University was opened in the autumn of 1876:—
### Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Enrolled</th>
<th>Graduates (incl. Fellows)</th>
<th>Matriculates</th>
<th>Non-Matriculates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876-77</td>
<td>89</td>
<td>54</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>1877-78</td>
<td>104</td>
<td>58</td>
<td>24</td>
<td>22</td>
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<tr>
<td>1878-79</td>
<td>123</td>
<td>63</td>
<td>25</td>
<td>35</td>
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<tr>
<td>1879-80</td>
<td>159</td>
<td>79</td>
<td>32</td>
<td>48</td>
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<tr>
<td>1880-81</td>
<td>176</td>
<td>102</td>
<td>37</td>
<td>37</td>
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<tr>
<td>1881-82</td>
<td>175</td>
<td>99</td>
<td>45</td>
<td>31</td>
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<tr>
<td>1882-83</td>
<td>204</td>
<td>125</td>
<td>49</td>
<td>30</td>
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<tr>
<td>1883-84</td>
<td>249</td>
<td>159</td>
<td>53</td>
<td>37</td>
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<tr>
<td>1884-85</td>
<td>290</td>
<td>174</td>
<td>69</td>
<td>47</td>
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<td>1885-86</td>
<td>314</td>
<td>184</td>
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<td>34</td>
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<td>1886-87</td>
<td>378</td>
<td>228</td>
<td>103</td>
<td>42</td>
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<tr>
<td>1887-88</td>
<td>420</td>
<td>231 (Phil., 220 Med., 11)</td>
<td>127</td>
<td>62</td>
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<tr>
<td>1888-89</td>
<td>394</td>
<td>216 (Phil., 202 Med., 14)</td>
<td>129</td>
<td>49</td>
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<tr>
<td>1889-90</td>
<td>404</td>
<td>229 (Phil., 209 Med., 20)</td>
<td>130</td>
<td>45</td>
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<tr>
<td>1890-91</td>
<td>468</td>
<td>276 (Phil., 233 Med., 33)</td>
<td>141</td>
<td>51</td>
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<tr>
<td>1891-92</td>
<td>547</td>
<td>337 (Phil., 298 Med., 39)</td>
<td>140</td>
<td>70</td>
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<td>1892-93</td>
<td>551</td>
<td>347 (Phil., 297 Med., 40)</td>
<td>133</td>
<td>71</td>
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<tr>
<td>1893-94</td>
<td>522</td>
<td>344 (Phil., 261 Med., 83)</td>
<td>123</td>
<td>55</td>
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<tr>
<td>1894-95</td>
<td>589</td>
<td>412 (Phil., 284 Med., 128)</td>
<td>126</td>
<td>51</td>
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<tr>
<td>1895-96</td>
<td>596</td>
<td>406 (Phil., 253 Med., 153)</td>
<td>149</td>
<td>41</td>
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<tr>
<td>1896-97</td>
<td>520</td>
<td>344 (Phil., 210 Med., 134)</td>
<td>144</td>
<td>32</td>
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<tr>
<td>1897-98</td>
<td>641</td>
<td>456 (Phil., 215 Med., 241)</td>
<td>152</td>
<td>33</td>
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<tr>
<td>1898-99</td>
<td>649</td>
<td>462 (Phil., 210 Med., 252)</td>
<td>163</td>
<td>24</td>
</tr>
</tbody>
</table>

During twenty-three years, three thousand six hundred and twenty-four individuals have been enrolled as students, of whom fourteen hundred and fifty-five are registered as from Maryland (including eleven hundred and seventy-six from Baltimore), and two thousand one hundred and sixty-nine from sixty-six other States and countries. Two thousand two hundred and sixty-two persons entered as graduate students, and thirteen hundred and sixty-two entered as undergraduates. Of the undergraduates, three hundred and forty-six have con-
Statistics.

continued as graduate students, many of them proceeding to the degree of Doctor of Philosophy. It thus appears that two thousand six hundred and eight persons have followed graduate studies here.

The following table indicates the geographical distribution of the students each year since the opening, as shown by the Annual Registers:

<table>
<thead>
<tr>
<th>Year</th>
<th>Of Maryland</th>
<th>Not of Md.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876-77</td>
<td>59</td>
<td>30</td>
</tr>
<tr>
<td>1877-78</td>
<td>71</td>
<td>33</td>
</tr>
<tr>
<td>1878-79</td>
<td>76</td>
<td>47</td>
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<tr>
<td>1879-80</td>
<td>97</td>
<td>62</td>
</tr>
<tr>
<td>1880-81</td>
<td>95</td>
<td>81</td>
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<tr>
<td>1881-82</td>
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<td>1882-83</td>
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<td>93</td>
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<td>1883-84</td>
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<td>126</td>
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<tr>
<td>1884-85</td>
<td>130</td>
<td>169</td>
</tr>
<tr>
<td>1885-86</td>
<td>130</td>
<td>184</td>
</tr>
<tr>
<td>1886-87</td>
<td>162</td>
<td>216</td>
</tr>
<tr>
<td>1887-88</td>
<td>199</td>
<td>221</td>
</tr>
</tbody>
</table>

The attendance upon the courses given in some of the principal subjects has been as follows during the last five years:

<table>
<thead>
<tr>
<th>Subject</th>
<th>1894-95</th>
<th>1895-96</th>
<th>1896-97</th>
<th>1897-98</th>
<th>1898-99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics and Astronomy,</td>
<td>132</td>
<td>126</td>
<td>78</td>
<td>85</td>
<td>79</td>
</tr>
<tr>
<td>Physics,</td>
<td>156</td>
<td>132</td>
<td>115</td>
<td>101</td>
<td>94</td>
</tr>
<tr>
<td>Chemistry,</td>
<td>130</td>
<td>123</td>
<td>117</td>
<td>139</td>
<td>118</td>
</tr>
<tr>
<td>Geology and Mineralogy,</td>
<td>26</td>
<td>37</td>
<td>26</td>
<td>39</td>
<td>34</td>
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<tr>
<td>Biology,</td>
<td>65</td>
<td>92</td>
<td>141</td>
<td>156</td>
<td>178</td>
</tr>
<tr>
<td>Pathology and Bacteriology,</td>
<td>66</td>
<td>49</td>
<td>33</td>
<td>39</td>
<td>21</td>
</tr>
<tr>
<td>Greek,</td>
<td>49</td>
<td>56</td>
<td>42</td>
<td>45</td>
<td>47</td>
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<tr>
<td>Latin,</td>
<td>68</td>
<td>84</td>
<td>76</td>
<td>73</td>
<td>71</td>
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<tr>
<td>Sanskrit, etc.,</td>
<td>60</td>
<td>40</td>
<td>34</td>
<td>40</td>
<td>33</td>
</tr>
<tr>
<td>Semitic Languages,</td>
<td>24</td>
<td>18</td>
<td>28</td>
<td>35</td>
<td>31</td>
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<tr>
<td>German,</td>
<td>152</td>
<td>167</td>
<td>139</td>
<td>170</td>
<td>125</td>
</tr>
<tr>
<td>French, Italian, etc.,</td>
<td>83</td>
<td>92</td>
<td>109</td>
<td>79</td>
<td>87</td>
</tr>
<tr>
<td>English, etc.,</td>
<td>140</td>
<td>143</td>
<td>122</td>
<td>132</td>
<td>142</td>
</tr>
<tr>
<td>History and Political Science,</td>
<td>107</td>
<td>104</td>
<td>116</td>
<td>129</td>
<td>123</td>
</tr>
<tr>
<td>Philosophy,</td>
<td>51</td>
<td>49</td>
<td>44</td>
<td>61</td>
<td>61</td>
</tr>
</tbody>
</table>
Statistics.

Since degrees were first conferred, in 1878, six hundred and nineteen persons have attained the Baccalaureate degree, five hundred and fourteen have been advanced to the degree of Doctor of Philosophy, and sixty-nine to the degree of Doctor of Medicine, as appears from the following table,—the whole number of individuals graduated being ten hundred and eighty-seven:

<table>
<thead>
<tr>
<th>B. A.</th>
<th>Ph. D.</th>
<th>B. A.</th>
<th>Ph. D.</th>
<th>M. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877-78</td>
<td>-</td>
<td>0</td>
<td>4</td>
<td>1888-89</td>
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<td>1878-79</td>
<td>-</td>
<td>3</td>
<td>6</td>
<td>1889-90</td>
</tr>
<tr>
<td>1879-80</td>
<td>-</td>
<td>16</td>
<td>5</td>
<td>1890-91</td>
</tr>
<tr>
<td>1880-81</td>
<td>-</td>
<td>12</td>
<td>9</td>
<td>1891-92</td>
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<tr>
<td>1881-82</td>
<td>-</td>
<td>15</td>
<td>9</td>
<td>1892-93</td>
</tr>
<tr>
<td>1882-83</td>
<td>-</td>
<td>10</td>
<td>6</td>
<td>1893-94</td>
</tr>
<tr>
<td>1883-84</td>
<td>-</td>
<td>23</td>
<td>15</td>
<td>1894-95</td>
</tr>
<tr>
<td>1884-85</td>
<td>-</td>
<td>9</td>
<td>13</td>
<td>1895-96</td>
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<tr>
<td>1885-86</td>
<td>-</td>
<td>31</td>
<td>17</td>
<td>1896-97</td>
</tr>
<tr>
<td>1886-87</td>
<td>-</td>
<td>24</td>
<td>20</td>
<td>1897-98</td>
</tr>
<tr>
<td>1887-88</td>
<td>-</td>
<td>34</td>
<td>27</td>
<td>1898-99</td>
</tr>
</tbody>
</table>

619  514  69

Certificates of proficiency in applied electricity have been awarded to ninety persons during the past eleven years.

The following table indicates the enrolment of students in the Medical School since its opening in October, 1893:—

<table>
<thead>
<tr>
<th>Candidates for the Degree of M. D.</th>
<th>Doctors of Medicine</th>
<th>Total Enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1893-94</td>
<td>-</td>
<td>18</td>
</tr>
<tr>
<td>1894-95</td>
<td>-</td>
<td>51</td>
</tr>
<tr>
<td>1895-96</td>
<td>-</td>
<td>84</td>
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<tr>
<td>1896-97</td>
<td>-</td>
<td>123</td>
</tr>
<tr>
<td>1897-98</td>
<td>-</td>
<td>167</td>
</tr>
<tr>
<td>1898-99</td>
<td>-</td>
<td>197</td>
</tr>
</tbody>
</table>

* Beginning with 1897 the courses offered to Doctors of Medicine have been given in May and June, after the compilation of the Register, and those in attendance are now counted in the enrolment of the succeeding year.
Personal Changes.

A list has been prepared of the Marylanders who have here been educated, with a statement of their occupations, so far as they have been reported to us. It includes fifteen hundred names, and is a striking illustration of the influence which this institution is exerting in the various pursuits to which educated men are devoted. It is too long a list to be inserted here, but copies may be obtained from the Registrar.

Another interesting study has been made of the positions to which our former students have been called. They may be found at the present time in almost all the important universities of the country,—from Harvard on the Atlantic seaboard, to the new universities on the Pacific coast. But they are most numerous in the Southern States. For example, of one hundred and thirty-seven former students, whose positions in colleges and universities are known to us, there are twenty-seven now teaching in Virginia, twenty in Tennessee, nineteen—in North Carolina, fourteen in South Carolina, eleven in Georgia, ten in Alabama and Kentucky, eight in Texas, and six each in Arkansas, Louisiana and Mississippi.

The following promotions and appointments have been made during the year, the tenure of office being fixed, in each case, by the action of the Trustees:

In the Philosophical Department:—

To be Associate Professors:

Jacob H. Hollander, Ph. D., Finance.
Christopher Johnston, Ph. D., Oriental History and Archaeology.
C. Carroll Marden, Ph. D., Romance Languages.
Edward R. Mathews, Ph. D., Mineralogy.
Westel W. Willoughby, Ph. D., Politics.

To be Associates:

Edward C. Armstrong, Ph. D., Romance Languages.
N. Ernest Dorsey, Ph. D., Physics.
Personal Changes.

DUNCAN S. JOHNSON, Ph. D., Botany.
PHILIP OGDEN, Ph. D., Romance Languages.
GEORGE B. SHATTUCK, Ph. D., Physiographic Geology.

To be Instructors and Assistants:
MURRAY P. BRUSH, Ph. D., Romance Languages.
WILLIAM B. HUFF, A. M., Physics.
WILLIAM M. MACKDERMOTT, Physical Culture.
MORRIS C. SUTPHEN, Ph. D., Latin.
HENRY S. WEST, Ph. D., English.

In the Johns Hopkins Medical School:—

To be Dean of the Medical Faculty:
WILLIAM H. HOWELL, M. D., Ph. D.

To be Professor of Obstetrics:
J. WHITRIDGE WILLIAMS, M. D.

To be Associate Professors:
LEWELLYS F. BARKER, M. B., Pathology. (Transferred from the department of Anatomy.)
ROSS G. HARRISON, Ph. D., M. D., Anatomy.

To be Associates:
CHARLES R. BARDEEN, M. D., Anatomy.
HARVEY W. CUSHING, M. D., Surgery.
GEORGE W. DOBBIN, M. D., Obstetrics.
WALTER JONES, Ph. D., Physiological Chemistry and Toxicology.

To be Instructors and Assistants:
Percy M. DAWSON, M. D., Physiology.
NORMAN B. GWYNN, M. B., Clinical Microscopy.
LOCHS P. HAMBURGER, M. D., Medicine.
THOMAS McCRAE, M. B., Medicine.
EUGENE L. OPIE, M. D., Pathology.
Mervin T. Sudler, Ph. D., Anatomy.

The University has lost the services of Dr. Minton Warren, Professor of Latin, who resigned at the close of the academic year, in order to accept a similar position in Harvard University. Dr. Warren has been among us since 1879, and has held successive appointments as Associate, Associate Professor, and Professor. During one year he was allowed leave of absence in order that he might be the Director of the
Resignations.

American School of Classical Studies in Rome. He had won an enviable distinction among the Latinists of this country, and he was, moreover, an able and successful teacher, and a colleague on whose friendship, cooperation and judgment everyone relied during the twenty years of his residence among us.

Dr. C. L. Poor, Associate Professor of Astronomy, has decided to give up, for the present at least, academic work, and to engage in private affairs which demand his serious attention. He has accordingly returned to his home in New York, and relinquished the position which he has honorably filled since he was admitted to the degree of Doctor in Philosophy in 1892.

Dr. A. Rambeau, Associate Professor of Romance Languages, has accepted an attractive call to the Massachusetts Institute of Technology, and entered upon the duties of his new station in the autumn of this year.

Professor Duncan has likewise resigned. During the past year he was absent on leave, and toward the close of it, he expressed his desire to be more free to engage in private business as a consulting engineer. He was in a large degree responsible for the organization and efficiency of our courses in applied electricity, and when he concluded to withdraw from the University, it appeared to the authorities best to re-organize the work which was so dependent on his personal qualities. The particulars of this re-organization have been set forth in the Annual Register. Mr. H. G. Geer, and Mr. H. S. Hering, who had been associated with Dr. Duncan in instruction, were released from their positions when he resigned and the work was re-arranged.
Gifts.

One of the best forms of a memorial, in honor of a departed friend or kinsman, is the foundation of a fellowship or scholarship, for the education of a meritorious scholar. Such a foundation was made, several years ago, by Mrs. Adam T. Bruce, to commemorate her son who had been a student and an assistant teacher among us. Now a second Fellowship is established by Mrs. Bertha Rayner Frank and Mr. Albert W. Rayner, the son and the daughter of Mr. William S. Rayner, of Baltimore. He recently died, at an advanced age, having led a long life of usefulness and honor in this community. His devotion to the Jewish people and his unusual interest in and acquaintance with Hebrew literature, have guided two of his children to the decision that a fellowship in the Semitic languages would be the most appropriate memorial. They have given to the Trustees the sum of ten thousand dollars to be invested for this purpose, and in order that the fund might be immediately effective, they have also given, as income in advance, the sum of five hundred dollars. The gift was gratefully accepted by the Trustees, and the "William S. Rayner Fellowship" in Semitic languages was duly instituted.

The Library is constantly in the receipt of valuable books. Mr. William W. Spence continues to send us the reprint of the narratives of the early Jesuit Fathers on the discovery of the interior of North America. This important series, invaluable to the student of our history, has now reached its fifty-sixth volume. To the same generous friend we are indebted for sixty volumes, including a collective reprint of the writings of modern English men of science.

Madame Edgar Quinet, of Paris, widow of the distinguished philosophical writer, has sent us from time to time copies of his most important writings.
Mr. Samuel P. Avery, of New York, President of the Grolier Club, to whom in former years the library has been indebted for acceptable gifts, has given us this year a copy of the portrait of Benjamin Franklin, painted by Duplessis and etched by Henri Lefort, published by the Grolier Club of New York.

Mr. Leopold Strouse, who wishes to see the library strengthened in its Semitic department by a full collection of books in Rabinical literature, has continued his generous gift, and has paid for the purchase of many valuable works selected by Professor Haupt and his associates. A catalogue of these books has been prepared and will soon be published.

One of the most illustrious persons connected with this University is Sylvester, the great mathematician, who held for seven years, from 1876 onward, the professorship of mathematics, and whose advent in this country at that time gave an extraordinary impulse to the study of mathematical science. He died March 15, 1897, in London, at the advanced age of eighty-three years. When he had gone, there was a general regret that his portrait had not been painted while he was here. Fortunately Mr. Harper Pennington, the painter, knew him well, and with the aid of photographs has succeeded in producing a life-like likeness which was hung in McCoy Hall, February 22, 1899. Few men of our generation, in the domain of abstract science, have won more renown than Professor Sylvester, and as long as this portrait lasts, his personality will be vividly presented to successive classes in this University. The gift of this portrait is due to a liberal merchant of Baltimore, who has not been willing that his name should be published, and this is not the only time in which he has shown his interest in our growth.
Lectures.

Some other friends, who would gladly have contributed to the cost of a portrait, have given to the Trustees a sum of money sufficient for the bestowal of a Sylvester medal for excellence in mathematics.

A portrait of Professor Remsen was also given to the University at the last commemoration, by a large number of those who have been his pupils since 1876, and by a few of his personal friends. The portrait was painted by Robert G. Hardie, Esq., of New York, who had previously painted Professor Newcomb and Professor Williams, and the presentation was made in the name of the contributors by Dr. J. E. Gilpin.

A cast in bronze of the likeness of Mr. John W. McCoy, modelled by Ephraim Keyser, the sculptor, has been placed in McCoy Hall.

A tablet commemorative of Mr. H. P. Shuter, a Bachelor of Arts in 1897,—who died at sea from disease contracted while serving in the United States Army in the Philippines,—has been placed near the class-rooms where so recently he studied.

The Levering lectures before the Young Men's Christian Association were delivered in Levering Hall, in March, by the Rev. Dr. William N. Clarke, Professor of Christian Theology in Colgate University, who chose as his subject "The Christian Heritage." The course consisted of three lectures, and it was followed with the greatest interest by a large company of students. These lectures have since been published. The continuance of these courses is due to the liberality of one of the Trustees, Mr. Eugene Levering.

The first course of lectures on the foundation established by Mr. J. B. Noel Wyatt, of Baltimore, to commemorate the
name of his friend, the late Mr. William Henry Wehrhane, was given in January by Dr. Kuno Francke, Professor of German Literature in Harvard University. The general subject was "Certain Phases of Flemish and German Religious Painting of the Fifteenth and Sixteenth Centuries," and the lectures were six in number.

A course of six lectures, under the auspices of the American Committee for Lectures on the History of Religions, was delivered in December by the Rev. Karl Budde, D.D., Professor in the University of Strassburg. The subject was the "Religion of Israel from the Earliest Times to the Exile."

Professor F. M. Warren, of Adelbert College, continued his lectures on French literature, giving eight lectures on "Realism and Naturalism."

At the opening of the sixth academic session of the Medical School, an address on "Medicine of the Nineteenth Century" was given by Dr. Clifford Allbutt, Regius Professor of Medicine in the University of Cambridge.

Dr. Albert Shaw, an honored graduate, now editor of the American Review of Reviews, has for a second time given the sum of $250 to secure a course of lectures on American Diplomatic History. The lectures were given in 1898–9 by Dr. J. H. Latané, now of Virginia.

Professor Schouler, the well-known historian, whose lectures for a number of years have been among the attractions of the historical department, continued his course last winter, and in view of our restricted resources declined to receive any emolument for them.

Among the meetings held during the year in the halls of the University by outside organizations may be mentioned
the celebration of the one hundredth anniversary of the founding of the Medical and Chirurgical Faculty of Maryland; the second annual meeting of the Maryland Conference of Charities and Correction; the annual public meeting of the Charity Organization Society of Baltimore; three meetings of the Baltimore Society of the Archæological Institute of America; and four meetings of the Maryland Folk-Lore Society.

Commemoration Day, February 22, 1899, was observed as usual in McCoy Hall by an assembly of the officers and students. The principal address was given by the President of the University. The degree of Doctor of Philosophy was conferred upon four candidates, and that of Bachelor of Arts upon three candidates. The University Alumni Association held its annual meeting and banquet in the evening.

The exercises of Commencement Day were held in the Academy of Music, June 13, 1899. Certificates of proficiency in Applied Electricity were conferred upon five persons; thirty-eight candidates were admitted to the degree of Bachelor of Arts; thirty-eight were advanced to the degree of Doctor of Philosophy; and thirty-two students who had previously attained to the baccalaureate degree, were promoted, after a four years' professional course, to the degree of Doctor of Medicine. The principal address was delivered by the Librarian of Congress, Dr. Herbert Putnam, and the candidates were presented by Acting-Dean Welch, Dean Griffin, and Professor Remsen. The music was given by a select orchestra under the leadership of Mr. E. L. Turnbull, a graduate of the University in 1893. The graduates and their friends were received in the evening by the President and Faculty, in the assembly room of McCoy Hall.
Lectures to Teachers.

The John Marshall Prize was awarded for the eighth time on Commemoration Day. The honor was bestowed on Jacob H. Hollander (Ph. D., Johns Hopkins, 1894), in recognition of the ability shown in his work entitled "The Financial History of Baltimore."

For the cultivation of musical taste and also for the promotion of social acquaintance among the members of the University and their friends, the Johns Hopkins Musical Association, which was formed in the winter of 1897–98, has been continued, and under its auspices and at its expense three concerts were given and also an illustrated lecture on Acoustics, by Professor Ames. They were greatly enjoyed by those who attended.

The Association was greatly indebted to Professor Heimendahl and to the other artists who took part. The Committee of Arrangements acted under the chairmanship of Professor Haupt.

During the winter of 1898–9, at the request of several persons who represented the teachers of Baltimore, especially the teachers in the public schools, several courses of lectures were given on Friday evenings and Saturday mornings. The committee in charge consisted of Professors Adams, Ames, and Clark. Arrangements were made by which those who desired to take notes, write essays and be examined, might have such opportunities, and those who passed successfully the required tests received certificates stating what they had done. The experience of last winter suggested some modifications of the plans which will be made in the winter of 1899–1900. This is not the first time that the attempt has been made to open certain courses of instruction to those who are engaged in teaching. In the earliest days of the University, and subsequently, repeated efforts have been made in
Publications.

this direction with varying degrees of success, and the record has been made up by Professor Adams and prepared for publication in a printed report.*

The progress of the University in all its regular work has been thoroughly satisfactory. The principal members of the faculty have been as active as ever in advancing the interests entrusted to them. Particular attention should be called to the continuance of the various scientific journals that are here published. The Journal of Chemistry, under the uninterrupted care of Professor Remsen, has completed its twenty-second volume, and elaborate indexes have been prepared for the complete sets. The Journal of Philology, edited from the beginning by Professor Gildersleeve, has reached its twentieth volume. This series, also, has been indexed. The Journal of Mathematics, which now appears under the guidance of Professor Newcomb, with the cooperation of A. Cohen, F. Morley and Charlotte A. Scott, has completed its twenty-first volume. The papers published by Professor Adams, as the Johns Hopkins University Studies in Historical and Political Science, now number thirty-eight volumes, including the extra volumes. The Journal of Experimental Medicine, edited by Professor Welch, has completed its fourth volume. Modern Language Notes,—originated and for a long while sustained by the private enterprise of Professor Elliott,—is now published under the auspices of the University. It has reached its fifteenth volume. The Reports of the Maryland Geological Survey, published by the University and edited by Professor Clark, have already reached their third volume. Professor Haupt is one of the editors of the Beiträge zur Assyriologie, of which this University is

Medical School.

the American publisher, and Professor Ames is one of the editors of the Astro-Physical Journal published in Chicago. Henceforward, the Journal of Terrestrial Magnetism and Atmospheric Electricity, edited by Dr. L. A. Bauer, will appear here. To these editorial services, most of the professors add the preparation of books, memoirs, essays and addresses pertinent to their studies. The list of such publications is too large to be here printed, and to distinguish certain works from others does not fall within the province of this Report.

The printing of dissertations by all who are promoted to the degree of Doctor of Philosophy is rigidly required. The list of these printed theses, which now reaches the number of three hundred, has been augmented during the year by the publication of forty-three essays, which have been sent, as heretofore, to the leading universities at home and abroad. Many of them have drawn out favorable notices from eminent scholars in the different departments to which they belong.

The Johns Hopkins Medical School has now completed its sixth year of systematic instruction leading up to the degree of Doctor of Medicine. The attendance during the year was as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fourth</td>
<td>33</td>
</tr>
<tr>
<td>Third</td>
<td>43</td>
</tr>
<tr>
<td>Second</td>
<td>59</td>
</tr>
<tr>
<td>First</td>
<td>62</td>
</tr>
</tbody>
</table>

The excellent attainments of those who here receive the degree of M. D. after a four years course of instruction subsequent to the baccalaureate degree have been widely recognized, and desirable openings have appeared beyond the ability of the School to supply the demand. The advantages
Geological Survey.

which come from the connection of the University and the Hospital are more and more obvious and cannot be too highly estimated. The clinical opportunities of the hospital and the dispensary are of the highest value. Dr. Welch, to whose services, as Dean of the Medical Faculty, the success of the School since its earliest days is largely indebted, requested release from the duties of that office at the close of the academic year in September, 1898; and Dr. Osler, Professor of Medicine, was persuaded to act as Dean during the year 1898; but as he was unwilling to continue in that position, the Faculty nominated and the Trustees confirmed the appointment of Dr. W. H. Howell, Professor of Physiology, beginning with the session of 1899-1900.

The new building, designed for the laboratories of Physiology, and Pharmacology and Physiological Chemistry, has been of the greatest advantage to the School. It contains admirable facilities for instruction and research in the subjects named, and also spacious rooms for a public assembly, the library, the office of the Dean and Registrar, and for the comfort of the students. It was opened in the mid-winter of 1898-99. In connection with the laboratories of Pathology, Anatomy and Clinical Medicine, the School is now as well equipped for scientific work as the Hospital is for the care of the sick and the relief of suffering.

The University has continued to aid in every way the work of two great bureaus which are maintained by the State of Maryland, for the study of the natural characteristics and resources of the State.

The State Weather Bureau, maintained in the closest relations with the United States Weather Bureau (under the department of Agriculture), has been in progress for the last nine years and has never been more efficient than now. It
occupies, free of any charges, the rooms set apart for it by the University and its officers have free access to all the other departments of the University. Of the greatest advantage is the remarkable collection of books pertaining to Meteorology, most of which are the gift of Professor Cleveland Abbe, LL. D., of Washington, a collection made by him during a life devoted, with the highest success, to the advancement of this science. The generous donor continues to add from time to time important publications to this branch of our library.

During the year, a Report on the Weather Service of Maryland has been printed. It is much more important than this brief mention would indicate.

The Maryland Geological Survey, of which Professor Clark is the Director, is rendering the greatest possible service to the State, and has received ample recognition from all who are interested in the progress of Maryland and also from those at a distance who are qualified to judge of its scientific thoroughness. The work is greatly advanced by the coöperation of the United States Geological Survey, Professor C. D. Walcott, Director, and indeed without this aid, the admirable maps could not have been prepared. It is also most advantageous that the establishment of Messrs. A. Hoen & Co., map-makers and lithographers, is situated in Baltimore; for the intelligent and skilful coöperation of the members of that firm, and of their employes, has enabled the scientific corps to put forth maps which are unsurpassed in their clearness, beauty and accuracy.

The work of the Survey includes:

(a) the actual survey of the territory of Maryland, its mountains, hills, plains, river courses and coasts;
Highways.

(b) the preparation of maps of the territory surveyed in forms and numbers adapted to general distribution;
(c) the study of the mines, quarries, clay-beds and other mineral resources of the State;
(d) the determination of the magnetic variation within the State, upon which all lines of property are ultimately dependent;
(e) the collection of examples of ores, rocks, minerals and earth, for study and comparison with those of other regions;
(f) the training up of young men qualified to be teachers and surveyors in the department of geology and mineralogy, or to be aids in mining and other industrial pursuits;
(g) the diffusion of knowledge in respect to the characteristics and resources of the State by means of books, pamphlets, maps, lectures, newspaper articles, excursions and conferences with those who for any reason seek for information.

Connected with the Geological Survey, as one of its most important departments, is the Highway division, which is devoted to the study of Roads, and especially to the measures which may be adopted in this State for the construction and improvement of the means of communication. Professor H. F. Reid is the head of this division. His observations, his comparison of our roads with those of other regions, his well-chosen apparatus for the test of materials, and his constant study of the characteristics of different parts of the State, have enabled him, in conjunction with the other members of the Survey, to prepare a report, which will soon be submitted to the legislature, and which affords abundant evidence of the value of this work.
In the spring of 1899, two members of the Medical Faculty, Dr. A. Flexner and Dr. L. F. Barker, volunteered to go to Manila, and make a study of the diseases prevalent in the Philippines. Leave of absence was granted them, together with the loan of important pieces of apparatus. For the expenses of their journey the sum of three thousand dollars was generously contributed by five business men of Baltimore, who are not willing that their names should be made public. Three younger men went with the above named professors, at their own expense, viz., Messrs. J. M. Flint, F. P. Gay, medical students, and Mr. John W. Garrett, of Baltimore.

The party was favored by the Secretary of the Navy, the Surgeon-General of the Army, the Surgeon-General of the Navy, and by other officers of the government, and by the officials of the American and Canadian railways; and to all these persons, and especially to the physicians, thanks are due not only from the University, but also from all who are interested in the ascertainment of the nature of tropical diseases. The results obtained will be made known from time to time in the scientific journals which pertain to medicine. A preliminary report is appended to this pamphlet.

Before closing this report I ask leave to recur to the subject of our Library, which stands in need of immediate aid. The Library appeals to those who can give small amounts as well as large, and any donor or group of donors may contribute to the advancement of those subjects in which they may be particularly interested. A few years ago, a gift of two thousand dollars from a gentleman in Connecticut enabled the University to buy standard editions of many
English authors whose works were but imperfectly represented here. The earliest gift the University received after its foundation was the Bluntschli library, purchased for us by the united efforts and contributions of the German citizens of Baltimore. Recently, Mr. G. W. Gail has bought and presented to the University the remarkable collection of books pertaining to Oriental languages which was formed by Professor Dillmann of the University of Berlin. Mr. Leopold Strouse, of Baltimore, every year makes an important addition to the collection of Hebrew literature. Mr. W. W. Spence frequently favors us with special donations. Quite recently Mr. Ernest Schmeisser, of Baltimore, has made a generous gift by which Professor Wood has been enabled to make purchases in the domain of German literature. This gift was very acceptable, for our collection of such books was quite inadequate, while every student of the University is expected to acquire a knowledge of the German language. There are other special departments of the Library which could be greatly enriched by similar contributions and I earnestly commend these interests to those friends of the University who may not be disposed to make large gifts but may show their interest by contributions to specific objects.

It is of the greatest advantage to this University that the Peabody Library has been built up upon such a wise plan. Our professors and students make constant use of it in their studies and all reasonable facilities are accorded to them as well as to all other scholars who resort to its treasures. The collection is not only a large one, well arranged and well catalogued, but the accessions that are made to it are selected with great discrimination. Anyone wishing to go to the original authorities in many branches of science, literature
and history, can be almost certain that he will find here a large part of the desiderata. The librarian and his assistants are always ready to meet the wants of those who are pursuing investigations.

Few cities are so well supplied as Baltimore with the varied sorts of libraries which are needed by an intelligent and educated community. Thus, in the Peabody Institute, there is a storehouse of costly and important books, including extended series published by learned academies, and journals which can rarely be purchased; the Pratt Library, with its branches, keeps up with modern publications and is an excellent circulating library; the Hopkins Library is arranged in many departments for the daily use of the students connected with the University; the Mercantile Library is an attractive place for all who wish the freest access to the shelves where current publications may be seen. Besides these general libraries there are certain special collections of great importance, including those of the Maryland Historical Society, the Bar Library, the Steinecke Library and the Library of the Medical and Chirurgical Faculty. The important periodicals of all countries are received in one or another of these institutions.

In conclusion, I acknowledge with gratitude the frequent tokens of appreciation which come to the University from its friends at home and abroad, and the unanimous and constant cooperation of all members of the Faculty in carrying on the responsible work entrusted to us.

Respectfully submitted,

Daniel C. Gilman,
President.
REPORTS ON THE INSTRUCTION IN THE CHIEF BRANCHES OF STUDY.

Prepared by the Principal Instructors in the several departments.

Mathematics.

GRADUATE COURSES.

Professor Newcomb gave a course of six conferences to the physical and mathematical students on general subjects pertaining to the exact sciences. The subjects of the conferences were:

I.—The development of the scientific habit of thought. Historic retrospect of the beginnings of modern Science, and of the habit of accurate thinking and reasoning.

II.—The fundamental concepts of Physics as they cluster around the question of action in distant.

III.—The concepts of transcendental Geometry.

IV.—The teaching of elementary Mathematics.

V.—Recent advances in Sidereal Astronomy.

VI.—The functions of Government in advancing Science.

Professor Craig gave courses on the Advanced Theory of Functions, on the Metrical Theory of Surfaces, and on the General Theory of Differential Equations.

Advanced Theory of Functions.—This course began with a brief account of Dirichlet's Principle and of the Theory of Conform Representation. This was followed by some work on the subject of implicit functions and functions of two or more complex variables. The general theory of algebraic functions of a single variable, the corresponding Riemann's Surfaces and Abelian Integrals were next studied, as also the theory of Uniform functions on a Riemann's Surface. This course concluded with a fairly full account of Poincaré’s work on Fuchsian and Kleinian Groups and the associated automorphic functions. For these latter subjects Poincaré’s well-known memoirs in the Acta Mathematica were used, as also Schlesinger’s Lineare Differential Gleichungen, and memoirs by Stahl, Humbert and Burnside.
Courses of Instruction, 1898–99.

Theory of Surfaces.—This course was intended to be an advanced one from the beginning, but the make-up of the class compelled a brief introductory course on the general properties of surfaces, based chiefly on Bianchi’s “Lezioni di Geometria” and, in part, on Darboux’s “Théorie générale des surfaces” and on Knoblauch’s “Allgemeine Theorie der Krummen Flächen.” Following this section of the course was given a complete account of Darboux’s kinematical method; the more this process is studied, the more powerful and valuable it appears. After a fairly full account of the theory of lines traced on surfaces an extensive course was given on geodesic lines, and after some smaller topics, such as “geodesic representation of one surface on another,” a full account was given of the theory of minimal surfaces and their associate and adjoint surfaces. In connection with this course much interesting and valuable work was done by members of the class.

General Theory of Differential Equations.—This course was not announced for the year, and such lectures as were given were given solely because of the constantly apparent need of the students for a definite knowledge of at least the Existence Theorems for Differential equations. The course was therefore almost wholly confined to these theorems, though a brief outline was given of Fuchs’ work on Linear Differential Equations. Next year it is intended to take up the subject again and give a full course on it.

Dr. Cohen gave the following courses:

   This course included a rather full account of the theory of series, the theory of line and surface integrals, a brief account of Dirichlet’s problem, the elementary theory of uniform functions and of algebraic functions, and concluded with a short study of singly and doubly periodic functions.

   The ground covered in this course was practically that treated in Appell’s “Traité de Mécanique Rationnelle.” In the seminar conducted in connection with this course, various topics and problems assigned to them were reported upon by the students.

   In this course were studied the general theory of substitutions, the Galois theory, and their applications to algebraic equations. The authors chiefly referred to were Bolza, Netto, Weber, Serret and Jordan.

   Appell and Lacour’s “Principes de la Théorie des Fonctions Elliptiques et Applications” was followed quite closely in this course.
   In the seminar conducted in connection with this course, other modes of treatment of the subject, as found in various treatises, and various applications were reported upon by the students and discussed.
Astronomy.

Undergraduate Courses.

These courses are the same from year to year. During the year 1898-99 they were given as follows:

For Candidates for Matriculation:
Solid Geometry. Four times weekly, till Christmas. Dr. Cohen.
Trigonometry. Four times weekly, from January 3 to March 17. Dr. Cohen.
Analytic Geometry. Four times weekly, from March 21 to end of year. Dr. Cohen.

First Year Course:
Analytic Geometry. Four times weekly, till Christmas. Professor Hulburt.
Differential and Integral Calculus. Four times weekly, from January 3 to end of year. Professor Hulburt.

Second Year Course:
Differential and Integral Calculus (special topics) and Determinants. Four times weekly, till Christmas. Professor Hulburt.
Theory of Equations. Four times weekly, January 3 to February 11. Professor Hulburt.
Modern Plane Analytic Geometry. Four times weekly, February 15 to April 1. Professor Hulburt.
Solid Analytic Geometry. Four times weekly, April 14 to end of year. Professor Hulburt.

Third Year Course (Elective):
Differential Equations. Twice weekly, through the year. Dr. Cohen.

Simon Newcomb,
Professor of Mathematics and Astronomy.

Astronomy.

During the year 1898-99 the following courses were given by Dr. Poor:

1. Course in Spherical and Practical Astronomy. Twice weekly, through the year.

This course was intended for those graduate students who were beginning the subject and for those who wished to take Astronomy as a subsidiary subject for the Doctorate. It included a general outline of the principal problems of Spherical Astronomy, the method of least squares, and a short historical sketch of the science. The books principally used in this course were Chauvenet's Spherical and Practical Astronomy and Young's General Astronomy.


This course was intended for advanced students in Theoretical Astronomy and included a thorough discussion of the various methods of computing
Courses of Instruction, 1898–99.

special perturbations of co-ordinates and of the elements. The students were practised in actual computations. Among the books consulted and referred to were Tisserand’s Mécanique Céleste, Oppolzer’s Bahnbestimmung, and Watson’s Theoretical Astronomy.


This course was given in connection with Dr. H. F. Reid, Associate Professor of Geological Physics, to the students of Geology. In it were discussed the simpler methods of finding one’s geographical position, azimuth, time, etc. This course was intended for scientific travellers and surveying parties.

4. Undergraduate course in General Astronomy. Twice weekly, through the year.

This was an elective course for third year students. Young’s General Astronomy was the text-book used.

The work in the Observatory was carried on by Dr. N. E. Dorsey; the observatory being open to graduate students during the entire year. The instruments principally used by the students were the sextant, transit instrument, and equatorial.

At the beginning of the year a number of repairs and alterations were made, and the Observatory is now in better condition for student work than ever before.

Charles Lane Poor,
Associate Professor of Astronomy.

Physics.

The Physical Laboratory has been open daily during the year for the work of advanced and undergraduate students. Regular courses of lectures have been given, and meetings have been held for the reading of the current journals.

The Physical Seminary has met weekly under the direction of Professor Ames. The main study for the year has been “The Principles of Mechanics.” Papers were presented by all the advanced students, and the subject was thoroughly discussed. A series of brief biographies of American and English physicists was also prepared and read.

The regular courses of instruction were as follows:

By Professor Rowland:
  Electricity and Magnetism. Four times weekly, through the year.

By Professor Ames:
  The Physical Seminary. Saturday mornings, through the year.
  Spectrum Analysis. Twice weekly, first half-year.
Physical Chemistry. *Twice weekly, second half-year.*
Advanced General Physics (with the assistance of Dr. Bliss). *Four times weekly, through the year.*
General Physics (Minor Course). *Four times weekly, through the year.*

By Associate Professor Cary T. Hutchinson:
Applied Electricity—Advanced. *Twice weekly, through the year.*
Applied Electricity—Elementary. *Twice weekly, through the year.*

By Mr. H. S. Hering:
Electrical Measurements. *Twice weekly, through the year.*
Central Station Equipment. *Twice weekly, through the year.*

By Mr. H. G. Geer:
Mechanics of Engineering. *Twice weekly, through the year.*
Steam and Hydraulic Engineering. *Twice weekly, through the year.*
Mechanical Drawing.

By Mr. J. B. Whitehead:
Alternating Current Machinery. *Twice weekly, through the year.*

In the laboratory the following work has been done:
The final reduction and publication of the tables of solar spectrum wave-lengths have been continued. The measurements have been made by Mr. L. E. Jewell. Mr. Jewell has also made a special study of the nature of the lines in the hydrogen spectrum. This has been published in The Astrophysical Journal.

Measurements of the wave-lengths of manganese have been made by Dr. C. N. Harrison, and these are now ready for publication.

Work on the Zeeman effect has been continued by Mr. H. M. Reese, and many interesting conclusions have been reached. The research, however, is not yet finished.

Mr. J. F. Merrill has investigated the effect of temperature, pressure, and condition of solution on the deposit of silver voltameters. The results are now ready for publication.

Mr. F. A. Saunders has continued his work of last year on the radiation of a "black" body, and has determined the energy-curves for temperatures between 100° C. and 600° C. An account of this investigation will appear soon in The Astrophysical Journal. Mr. Saunders has also studied the comparative absorption of ice and water for the long ether-waves.

Mr. L. M. Potts has studied the absorption of condensers when used with alternating currents, and has derived some interesting results.

Dr. V. Novak, of the University of Prague, carried on, during half the year, an investigation on the conductivity of extremely dilute salt solutions.

Mr. C. Kinsley has published an account of two interesting experiments: one, on the effect of suddenly cooling the end of a long rod of iron, and thus producing a "pulse" of low temperature; the other, on a new method for the measurement of the rate of alternation of an alternating dynamo.
Abstracts of all the above researches appeared in the Johns Hopkins University Circulars for June, 1899.

During the year there have been enrolled sixteen graduate students, following Physics as their principal subject, and ten students, candidates for the certificate in Electrical Engineering. In June, two of the advanced students received the degree of Doctor of Philosophy.

Dr. Louis Duncan was granted leave of absence, owing to ill health; and his position was filled during the year by Dr. Cary T. Hutchinson, who most kindly took the time from his professional work.

HENRY A. ROWLAND,
Professor of Physics.

Chemistry.

The work in the Chemical Laboratory has been carried on as usual through the year. In the main the teaching staff has been the same as during the last few years. At the close of the year 1897-98, Dr. W. W. Randall resigned his post as Associate, in order to take the position of Science Master in the school at Lawrenceville, N. J. In consequence of this Dr. J. E. Gilpin was promoted to be an Associate in Chemistry, and put in charge of the work of Minor Course students. At the same time Dr. H. C. Jones was also promoted and given the title of Associate in Physical Chemistry. Lectures and class-room instruction have been given as indicated below:

By Professor Remsen:
- The History of Chemistry, advanced course for graduate students. Four times weekly, until the middle of March.
- Selected topics in Inorganic Chemistry. Four times weekly, from the middle of March to the end of the year.
- Meetings for Reports on the Current Journals of Chemistry. Weekly, through the year.

By Professor Morse:
- General Inorganic Chemistry (Major Course). Four times weekly, until Christmas.
- Compounds of Carbon (Major Course). Four times weekly, from Christmas to the end of the year.

By Professor Renouf:
- General Chemistry (Minor Course). Four times weekly, through the year.

By Dr. Jones:
- Physical Chemistry, for Graduate Students. Twice weekly, through the year.

By Dr. Gilpin:
- Reviews in General Chemistry (Minor Course). Weekly, through the year.
A course of Historical Lectures was given by graduate students. The names of the lecturers and their subjects are given in the following table:

H. J. Turner, Development of Theories Regarding Acids.
J. S. Chamberlain, Fumaric and Maleic Acids.
C. E. Waters, Cobalt-Ammonia Compounds.
F. D. Wilson, Naphthalene.
H. G. Byers, Diazo and Diazonium Compounds.
R. Nakaseko, Camphor.
J. H. C. Winston, Phenol Ethers.
W. B. Holmes, Guanidine.
W. M. Blanchard, Alizarin.
V. J. Chambers, Aldehyde.
J. S. Fischer, Urea.
J. C. W. Frazer, Acetone.
W. W. Garner, Quinone.
D. W. Horn, Boron and its Compounds.
N. Knight, Unsaturated Acids.
J. C. Olsen, The Radical Ammonium.
A. M. Patterson, The Radical of Benzoic Acid.
H. Canter, Chloroform.
C. E. Caspari, Ethyl Acetoacetate.

Ten candidates presented themselves for the degree of Doctor of Philosophy. Their names, with the titles of their dissertations, are given below:

W. N. Berkeley, An Investigation of the Relative Rate of Reduction of Nitrobenzoic Acids.
H. G. Byers, A Study of the Reduction of Permanganic Acid by Manganese Dioxide.
J. S. Chamberlain, A Further Study of two of the Products of the Transformation of Parasulphaminebenzoic Acid when heated to 220°.
G. S. Fraps, Composition of a Wood Oil.
W. B. Holmes, A Further Investigation of the Chlorides of Orthosulphobenzoic Acid and of Paranitroortho sulphobenzoic Acid.
R. Nakaseko, Some Transformations of Metasulphaminebenzoic Acid under the Influence of Heat.
H. J. Turner, Reaction of Sulphourea with Benzene- and Toluensulphonchlorides.
C. E. Waters, A Study of the Products formed by the Action of Heat on Parasulphaminemetatoluic Acid.
F. D. Wilson, Orthosulphaminebenzoic Acid and Orthocarbaminebenzenesulphonic Acid.
J. H. C. Winston, Action of Tetrazoditolyl Chloride and Tetrazodiphenyl Chloride on Certain Alcohols.
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These will be published in separate form as dissertations, and the more important parts will be published in the American Chemical Journal as soon as place can be found for them.

There have been enrolled thirty-seven graduate students following Chemistry as their principal subject.

Three numbers of Vol. XX and six numbers of Vol. XXI of the American Chemical Journal have been issued. It has been found necessary to enlarge the Journal, and hereafter it is to appear monthly. The yearly issue will be divided into two volumes.

Ira Remsen,
Professor of Chemistry.

Geology.

The Geological Laboratory was open daily, except Sunday, throughout the academic year to graduate and undergraduate students. The equipment of the department was enlarged during the year through the increased facilities provided for the library, by means of which the special collections of books, which had been hitherto scattered in distant parts of the building, were brought together. Special rooms were arranged for the Abbe, Williams, and Lewis libraries, which now occupy connecting rooms and adjoin the geological library of the University.

The instruction in geology was augmented at the close of the year by the addition of Professor Cleveland Abbe, of the U. S. Weather Bureau, who will hereafter lecture at irregular intervals upon the principles of meteorology, and also by the addition of Dr. L. A. Bauer, of the U. S. Coast and Geodetic Survey, who will give a brief course of instruction in terrestrial magnetism.

An invitation was extended early in the year to Professor W. C. Brøgger, of the University of Christiania, to deliver a course of lectures upon the George Huntington Williams foundation during 1900, and this invitation on the part of the University authorities was cordially responded to by Professor Brøgger, next April being selected as the time for the course.

During the year the following courses of instruction were given:

(a) General Geology, by Professor Clark and Dr. Shattuck. Four lectures and one afternoon in practical work each week, throughout the year.

(b) Paleontology, by Professor Clark. Two lectures each week, throughout the year.

(c) Geological Physics, by Associate Professor Reid. Two lectures each week, first half-year.

(d) Experimental Geology, by Associate Professor Reid. Two lectures each week, second half-year.
Geology.

(e) Mineralogy, by Associate Professor Mathews. *Three lectures each week, throughout the year.*

(f) Petrography, by Associate Professor Mathews. *Three lectures each week, throughout the year.*

(g) Climatology, by Dr. Fassig. *Two lectures each week, first third-year.*

(h) Exploratory Surveying, by Associate Professors Reid and Poor. *Two lectures each week, second third-year.*

(i) Stratigraphic and Structural Geology, by Mr. Willis. *Two lectures each week, last third-year.*

(j) Mesozoic Deposits of the Southwest, by Dr. T. W. Stanton. *One lecture in December.*

(k) Geological Conferences. *Fortnightly, throughout the year.*

(l) Student Lectures. *Fortnightly, throughout the year.*

Original Work and Publications. Geological work was continued by Professor Clark upon the older Coastal Plain deposits of the Middle Atlantic Slope, and also on the general study of the relations of geology to road-building. Professor Clark was also actively employed during the year in the management of the State Geological Survey and in the preparation for publication of the third volume of its reports. As Director of the State Weather Service, he was also engaged in the preparation of a report treating of the general scope of the State Weather Service work and in bringing out the first volume of the new series of reports of that organization.

Associate Professor Reid was engaged in investigating the problems connected with ice-movement and in collecting information regarding the various American glaciers. He visited Switzerland during the summer of 1899 for further investigation regarding the movement and stratigraphy of glacier-ice. As Chief of the Division of Highways of the Maryland Geological Survey, Dr. Reid has been employed in the preparation of a report dealing with the mechanical determination of the value of the several rocks of the state as road-materials, and also in preparing a report upon the economic importance of properly constructed roads.

Associate Professor Mathews continued his investigations of the crystalline rocks of the Piedmont area of Maryland. Dr. Mathews was largely engaged throughout much of the year, as Assistant State Geologist, in supervising various phases of the state work, and also in editing manuscript and maps for the forthcoming volumes of the Survey. He also took an important part in the preparation of Volume I of the Maryland Weather Service.

Dr. Shattuck, as Chief of the Coastal Plain Division of the State Geological Survey, was actively engaged in the field during much of the past year in a special study of the late Tertiary and Pleistocene formations of eastern and southern Maryland. He had associated with him Messrs. L. C. Glenn and G. C. Martin. Dr. Shattuck also conducted the series of Teachers' Lectures in Geology given during the past year, under the
Courses of Instruction, 1898-99.

auspices of the University, to the teachers of Baltimore and vicinity. Over two hundred teachers were in attendance upon this course, and Dr. Shattuck, in addition to his lectures, gave a series of weekly conferences and also conducted several excursions into the surrounding country.

Three candidates presented themselves in June for the degree of Doctor of Philosophy. Mr. O. L. Fassig, who, in addition to being an observer of the U. S. Weather Bureau stationed at Baltimore, had been for two years instructor in meteorology in the University, presented an important thesis upon the types of March weather with especial reference to the Middle Atlantic Slope. This paper has already been printed in the American Journal of Science for November, 1899. Mr. L. C. Glenn devoted his attention to the study of the large and interesting Pelecypod fauna of the Maryland Miocene. His complete and elaborate paper upon that subject will form a part of one of the volumes of the forthcoming systematic series which the Maryland Geological Survey has in contemplation. Mr. F. W. Cragin completed an investigation, commenced several years ago, on the Malone Jurassic formation of Texas, the paleontological portion of this report, as well as many of the broader geological generalizations, being worked out under the supervision of Dr. T. W. Stanton at the U. S. National Museum. This report will be published under the auspices of the U. S. Geological Survey.

Several other investigations were undertaken by members of the department and will result in later contributions.

Excursions and Annual Geological Expedition. Numerous short excursions were made during the autumn months into the region immediately adjacent to Baltimore, both in the Coastal Plain and in the Piedmont Plateau. An extended expedition was made in the spring, through the courtesy of the Board of Public Works and under the auspices of the Maryland Geological Survey, one of the State steamers being placed at the disposal of the party. Numerous points in the southern and eastern portions of the Coastal Plain were visited, and the members of the party were given an opportunity to examine a complete section of Coastal Plain deposits from the Lower Cretaceous to the Pleistocene. Hydrographic work was also carried on, under the direction of Dr. Reid, a set of hydrographic apparatus for determining the depth and temperature of the water and the sediments on the bed of the Bay being used.

Scientific Societies. The fortnightly meetings of the Geological Society of Washington were attended from time to time during the winter by the instructors and students of the department, all of whom were elected non-resident members of that organization. Several members of the department also became members of the National Geographic Society and availed themselves of its privileges. The results of many of the most noteworthy investigations of the year are presented to these societies,
Cooperation. Much important cooperation has been secured for the department during the past year through the courtesy of the chiefs of several of the Government Bureaus. The close affiliation also existing between several of the State Bureaus and the Geological Department has been of much material advantage in the conduct of the various investigations which have been under way.

The cooperation, rendered by the U. S. Geological Survey, through its chief, Hon. Charles D. Walcott, and by the U. S. Weather Bureau, through its chief, Professor Willis L. Moore, has been of very material advantage to the students in geology in various ways. Professor Clark has been for several years in charge of a division of Coastal Plain work as a geologist of the U. S. Geological Survey. Mr. Bailey Willis, of the U. S. Geological Survey, is granted leave of absence yearly to give a course of lectures upon stratigraphic and structural geology. Dr. Fassig has also been designated by Professor Moore as an instructor in meteorology upon the staff of the Geological Department, and Professor Cleveland Abbe is granted the privilege of giving special lectures upon the principles of meteorology from time to time. Professor Moore has further appointed two of the students of the Geological Department as assistants in the Weather Bureau office at the University, where they have an opportunity not only of learning the methods of Weather Bureau work, but also of securing important financial aid.

The close relations existing between the Maryland Geological Survey and the Maryland Weather Service, on the one hand, and the Geological Department, on the other, make it possible for the students to avail themselves of the opportunities afforded by these two State bureaus, both of which are devoted to a study of the physical characteristics of the State of Maryland. Most of the advanced students find employment and valuable experience during their vacations in connection with this work.

Apparatus and Collections. Several important additions were made to the apparatus and collections during the year. The library was considerably enlarged by the addition of several important serials and much-needed geological maps. Several valuable collections of rocks and fossils were also acquired.

WM. BULLOCK CLARK,
Professor of Organic Geology.
The Biological Sciences.

During the past academic year the biological laboratory has been open for advanced and collegiate students, and certain courses have been attended by students in the medical school. Lectures and class-room instruction have been given as follows:

By Professor Brooks:
- Advanced Zoology. For graduate students. Weekly, through the year. (With Dr. Andrews and Dr. Johnson.) Meetings of graduate students for reports on the current literature of Zoology and Botany. Weekly. Elementary Zoology. Four times a week, October 5 to January 1. (With Dr. Andrews.) Elective course in Zoology. Twice a week, through the year.

By Professor Howell:
- Physiology. Three times weekly, through the year, for medical students and graduate students in biology. Meetings of graduate students for reports on the current literature of Physiology. Weekly, through the year. Physiological Seminary. Weekly, through the year.

By Dr. Andrews:
- General Biology. Daily, to April 1. Elements of Embryology. Three times a week, from April 1 to end of session. Comparative Embryology. Daily, April 1 to end of session.

By Dr. Dreyer:
- Histology and Physiology. For undergraduates. Four times weekly, from January 1 to April 1.

By Dr. Barton:
- Analysis of Plants. Twice weekly, from April 1 to end of session.

By Dr. D. S. Johnson:
- Morphology and Histology of Plants. For graduate students. Four exercises a week, through the year.

ADVANCED WORK IN ZOOLOGY.

The following researches in zoology have been carried on during the year: The Hydro-medusae of our southern Atlantic coast; The anatomy and embryology of the Ophiuridae; The anatomy and histology of the eyes of medusae; The physiology of the Cubomedusae; The development of Penilia; The morphology of Insects; The embryology of Lamellibranchs; The anatomy and histology of Nautilus; The blood of Siphunculus; The embryology of Petromyzon; The study of Mesenchyma-cells. Three parts of Volume IV of Memoirs from the Biological Laboratory have been printed during the year, completing the volume, which is now
The Biological Sciences.

ready for distribution. It consists of the following memoirs: The Cubomedusae, with eight plates, by F. S. Conant; Synapta vivipara, with plates, by H. L. Clark; Yoldia limatula, with five plates, by G. A. Drew; Ophiura squamata, with plates, by Caswell Grave; The Cubomedusae, with plates, by E. W. Berger. The family of the late Dr. Conant has paid for the publication of two of these memoirs: the one by Conant and the one by Berger, which is based upon material collected by Conant.

The Cell, by Wilson, and Parker and Haswell's Zoology, were read in course in the zoological seminary, which met weekly throughout the year, and reports upon the progress of researches in the laboratory were made. In addition, twenty informal meetings were held for reading and discussing Brooks's Foundations of Zoology.

A fellowship was held by Caswell Grave, who took charge of the museum. The Adam T. Bruce Fellowship was awarded to Dr. G. A. Drew, who resigned it in order to accept the position of assistant in zoology. Dr. H. McE. Knowler was reappointed a fellow by courtesy, and he continued through the year his researches on the embryology of insects.

The following promotions of those who have been students in zoology have been made during the year: R. G. Harrison, Ph.D., 1894, Associate Professor of Anatomy in this University; D. S. Johnson, Ph.D., 1897, Associate in Botany in this University; G. A. Drew, Ph.D., 1898, Assistant in Zoology in this University; J. L. Kellogg, Ph.D., 1892, Assistant Professor of Biology in Williams College; George Lefevre, Ph.D., 1896, Professor of Zoology in the University of Missouri; H. McE. Knowler, Ph.D., 1896, Instructor in Anatomy in this University; H. L. Clark, Ph.D., 1897, Professor of Biology in Olivet College; M. T. Sudler, Ph.D., 1899, Assistant in Anatomy in this University; E. W. Berger, Ph.D., 1899, Professor of Biology in Baldwin University.

The degree of Doctor of Philosophy was bestowed upon M. T. Sudler, whose dissertation is on the Development of Penilia; upon E. W. Berger, whose dissertation is on the Cubomedusae; and upon Caswell Grave, whose dissertation is on Ophiura squamata. Printed copies of the dissertation of G. A. Drew have been presented to the library, in accordance with our rules. The dissertations of Knowler, Berger, Sudler, and Grave have been printed, but not yet received.

Dr. D. S. Johnson had charge of the instruction in Botany at the marine laboratory of the Brooklyn Institute, in the summer vacation, and W. C. Curtis was an instructor in the marine laboratory at Wood's Holl.

Leave of absence for two weeks was granted to me in December to visit Columbia University, where I delivered twelve lectures, which have been published by Columbia University, under the title of The Foundations of Zoology, as Volume V of their Biological Series. I also received leave of absence in June to deliver an address at the opening of the new biological laboratory of Adelbert College of Western Reserve University. This address has been published by Adelbert College.
Courses of Instruction, 1898-99.

Advanced Work in Botany.

The following researches in botany have been carried on in the laboratory, under the supervision of Dr. D. S. Johnson: The development of the stem of Marsilia; the embryology of the Piperaceae.

The Botanical Seminary met weekly from January 1 to April 1, and read Sachs' History of Botany, in course.

Marine Zoology.

As our advanced students were invited to make use of the marine laboratory which was established this summer by the United States Fish Commission at Beaufort, N. C., an appropriation was made by the University to enable them to take advantage of this opportunity. The appropriation was used in purchasing reagents and laboratory supplies, in the payment of travelling expenses and freight, and in the rent of a boat and the employment of a boatman.

The laboratory was ably directed by H. V. Wilson, Ph. D., one of our graduates, and a former Adam T. Bruce fellow, now Professor of Biology in the University of North Carolina. He spent two summers at Beaufort, some years ago, as a member of our marine laboratory, and as he has since visited the place from time to time with parties of students from his own University, for work in marine zoology, he is well acquainted with the locality, and was thus able to advise and direct the members of our party, and to help them to find, without loss of time, what they needed for their work, so that they were able to carry on their researches with advantage and profit.

The selection of a locality by the Commission is one of the results of our own investigations, carried on in the waters of Beaufort for a long time. We have proved, by our work, that Beaufort presents very unusual opportunities for the study of the economic aspects of many forms of marine life, and for the prosecution of scientific research in marine zoology; and as the resources of the Fish Commission enable it to afford to investigators much greater advantages than a University can command, it is to be hoped that the Beaufort laboratory of the Commission may become a permanent establishment.

Six of our instructors and graduate students—Dr. D. S. Johnson, Dr. G. A. Drew, Dr. Caswell Grave, Dr. E. W. Berger, Mr. W. C. Coker, and Mr. A. M. Reese—availed themselves of this opportunity for seaside work. Dr. Johnson studied the flora of the Banks of North Carolina and the algae of the sounds, and he prepared a report of this work which will appear in the Report of the Fish Commission. He also preserved material for the study of the life-history of the Cypres; that of Gaururus, which is one of the most primitive of the flowering plants; and for the study of the morphology of certain rare and little-known algae. In this work he was
The Biological Sciences.

assisted by Mr. Coker. Dr. Drew continued his study of the embryology of Lamellibranchs, and he obtained material for the study of the life-history of Solomya and Arca. Dr. Grave continued his work on the Ophiurans, and Dr. Berger his on the eyes of Medusae. Mr. Reese collected material for elementary instruction in our laboratory. The outbreak of yellow fever at Old Point prevented me from carrying out my plan of visiting Beaufort in August, and my visit later was necessarily so short that I was not able to engage in any research.

The Biological Laboratory.

All the physiological apparatus and books on physiology were removed from the biological laboratory to the new physiological laboratory early in the year 1899, and the rooms which had been used for research and instruction in physiology became available for other purposes. As this change has afforded more space for the museum and for the library, which had outgrown the accommodations, room 16 has been fitted with shelves and is now used as part of the museum; and room 20 has been supplied with blackboards and set apart for the lectures and meetings of the journal club and seminary.

These changes have made room 21 available as part of the library, and it has been equipped with study-tables and set apart as a reading room and study for instructors and graduate students.

Extensive repairs, which were necessary for the preservation of the biological laboratory, were completed during the summer.

Advanced Work in Animal Physiology.

The advanced work in animal physiology during the past year was directed by Professor Howell, with the assistance of Dr. Dreyer. The graduate students met weekly in a journal club to discuss current literature, each student in turn reporting some research that had appeared recently. The same students were organized into a seminary, which met weekly to read and discuss Biedermann's Electro-physiology.

A course of lectures and demonstrations on Animal Physiology was also given during the year. This course was designed mainly for the students in the medical school, but was attended by a number of graduates who were offering physiology as a subordinate subject for the degree of Ph. D.

The fellowship in Physiology during the year was held by Dr. Percy M. Dawson. Dr. Dawson carried on during the year a careful investigation upon the effects of intravenous injections of normal saline and Ringer's mixture after severe hemorrhage; he also rendered very valuable service in the laboratory in the course of practical physiology given to the medical students.

Mr. J. C. Herrick was engaged in an investigation of the effect of temperature upon the nerve impulse, an investigation which will be
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continued during the present year. Mr. E. C. Walden completed his study of the action of certain inorganic and organic solutions upon the heart, special attention being paid to the supposed nutritive action of serum-albumin. The results of this investigation have appeared in the American Journal of Physiology, Volume III.

Other investigations have been in progress upon the cortical centres of vaso-motion in the brain and the plethysmographic records of hypnотic sleep, the results of which will be reported later.

During the year the physiological department was moved to the new laboratory, corner of Monument and Washington streets. The troubles of moving interfered somewhat with the work of investigation, but, with the cheerful aid of the special workers in physiology, the transfer was made with comparative ease, and it is hoped that the ample accommodations and greatly increased facilities for investigation which are offered in the new laboratory, will soon make themselves apparent in the research work of the department. The distance of the new laboratory from the central buildings of the University has not interfered with the work of the graduate students in physiology, as the courses have been so arranged as to occupy either an entire day, or an entire forenoon or afternoon.

W. K. BROOKS,
Professor of Zoology.

Greek.

Under the direction of Professor Gildersleeve the advanced students of Greek have been organized into a Greek Seminary. According to the plan of the Seminary, the work of each year is concentrated on some leading author or some special department of literature. During the past year the centre of work has been Aristophanes.

In the Seminary proper, which met twice a week during the academic year, the Aristophanic comedies selected for closer study were The Knights, The Birds, and The Frogs; and the members of the Seminary were required to present in turn critical and exegetical commentaries on parts of these plays. Introductory lectures to all the plays, with elaborate analyses, were also prepared by the students, and all were made the subject of comment and criticism by the Director. In connection with the Seminary, the Fragments of the Old Attic Comedy were studied, and lectures were delivered by the Director on Aristophanes, his art and his times.

Of investigations carried on by the graduate students may be mentioned: the *deus ex machina* from the Greek point of view; Plato’s use of animals in illustration; the Relations of the Greek Family; negative compounds
in Greek; the history of certain Greek types of predication; and in composition and with case.

Besides conducting the Seminary course and the auxiliary work, Professor Gildersleeve delivered thirty lectures on the Problems of Greek Syntax, gave some eighteen readings in the Greek Tragic Poets, and conducted twenty-four exercises in extemporaneous translation from Greek into English and English into Greek.

Associate Professor Miller conducted readings twice a week in Aristophanes (first half of the session); a course of lectures and practical exercises in Greek Rhythms and Metres (second half of the session); and a series of exercises in advanced Greek Composition for the benefit of candidates for the degree of Doctor of Philosophy.

Dr. Mitchell Carroll, Reader in Classical Archaeology, lectured on the Acropolis and the Topography of Athens twice a week during the first half-year, and on Greek Sculpture during the second half-year, making use of the collection of casts in the Peabody Institute.

Undergraduate courses were conducted as follows:

By Associate Professor Spieker:
- Plato, Protagoras. Three times weekly, first half-year.
- Elegiac, Melic, and Iambic Poets; Sophocles, Antigone. Three times weekly, second half-year.
- Xenophon, Oeconomicus. Three times weekly, first half-year.
- Lysias, Epitaphius; Euripides, Hippolytus. Three times weekly, second half-year.
- Lucian, Vera Historia; Letter of James. Twice weekly, first half-year.
- Prose Composition (two classes). Weekly, through the year.

By Associate Professor Miller:
- Prose Composition. Weekly, through the year.

Undergraduates have read privately for examination the following books:
- Aeschylus, Prometheus Vinctus. (7).
- Aristophanes, Clouds. (6).
- Plato, Apology. (3).
- Homer, Odyssey, books i, ix, x. (7).

B. L. Gildersleeve,
Professor of Greek.
Courses of Instruction, 1898-99.

Latin.

The Latin Seminary, under the direction of Professor Warren, held two meetings a week throughout the year, the centre of work being the Orations and Letters of Cicero. During the first half-year a course of weekly lectures was given by Professor Warren, on Roman Oratory. The Oratio pro Roscio Amerino and selected letters were interpreted by members of the Seminary. Analyses were presented of the following orations: pro Roscio Amerino, in Caecilium, pro Cluentio, de Imperio, pro Murena, pro Archia, de domo suo, pro Caelio, pro Plancio, pro Milone, pro Marcello, and the Second Philippic. Papers were prepared by the members of the Seminary on the style of the following correspondents of Cicero: Caelius, Dolabella, Marcellus, Vatinius, Servius Sulpicius, Matius, D. Brutus, Plancus, Galba, Lentulus Spinther, Pollio, and M. Brutus. A course in the Incertus Auctor ad Herennium, meeting weekly, completed the reading of this rhetorical treatise. In the second half of the year Professor Warren lectured once a week on the Boman Forum and the Imperial Fora. A Journal Club met fortnightly to report on recent periodical literature in the field of Latin. In connection with the Seminary a class met regularly, under the direction of the Fellow, and read rapidly orations and letters of Cicero.

Associate Professor Smith conducted a course of practical exercises in Latin Composition, meeting weekly throughout the year.

Dr. H. L. Wilson, during the second half of the year, conducted a course in the Silvae of Statius, meeting weekly.

Undergraduate courses were conducted as follows:

By Associate Professor Smith:
Juvenal; Pliny's Letters. Three times weekly, first half-year.
Terence, Hautontimorumenos; Plautus, Mostellaria. Three times weekly, second half-year.
Tacitus, Annales. Twice weekly, second half-year.
History of Roman Literature. Weekly, through the year.
Latin Prose Composition. Weekly, through the year.

By Dr. H. L. Wilson:
Livy. Three times weekly, first half-year.
Horace. Three times weekly, second half-year.
Cicero's Letters; Sallust, Catiline. Three times weekly, first half-year.
Vergil, Georgics; Ovid, Heroides. Three times weekly, second half-year.
Latin Prose Composition (two classes). Weekly, through the year.

Undergraduates read privately for examination the following books:
Caesar, Bellum Civile, book i. (26).
Suetonius, Augustus. (26).
Horace, Ars Poetica. (26).
The work of this department, as appears from its title, is divided into two sections. The first is concerned with the philology of India; the second with Linguistic Science, Comparative Philology of the Indo-European languages, and the special study of languages of the same family, such as Avestan (Old Persian), Lithuanian, Slavic, etc.

Indian philology centres about the Vedic Seminary, whose plan is to present, in triennial rotation, the principal themes in the study of the Veda. They are the literature of the Rig-Veda; the literature of the Atharva-Veda; and the literature of the Brāhmaṇas and the Upaniṣads. The nature of this three-fold division is explained fully in the President's Annual Report for 1895. During the session of 1898-9 the Vedic Seminary, under the direction of Professor Bloomfield, was engaged in the study of the Rig-Veda, with especial reference to its most representative religious and mythological ideas. Under the methods of Vedic study pursued in this Seminary, absolute restriction to any single document is precluded. The Vedas are studied as a unit: every text is studied with reference to the related conceptions of the remaining texts of the literature. In this way were interpreted a considerable number of Vedic hymns representing some of the leading themes of the Rig-Veda: prayers to special divinities, theosophic hymns, and hymns that illustrate the main features of ancient Vedic life.

Professor Bloomfield was granted leave of absence for the part of the year from Easter to the end of the session, in order to supervise abroad the photographic reproduction of the famous unique manuscript of the Kashmirian Atharva-Veda, the so-called Paippalāda-Veda. An announcement of this plan inviting subscriptions to the work was published by the University in a special circular. Professor Bloomfield also presented his project to the American Oriental Society at its meeting in Hartford in April, 1898. It now seems likely that the work will be ready for distribution towards the end of 1899.

The most advanced work in Sanskrit was devoted to the study of Kālidāsa's lyric drama, the Çakuntala. Some of the characters in the Hindu drama speak Sanskrit, others Prākrit, a medieval development of Sanskrit. Hence the course began with an introduction to the Prākrit of the drama, the analysis and comparison of the Prākrit with Sanskrit.
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being continued throughout. Nearly two acts of the drama were interpreted critically.

The remaining work in Sanskrit consisted of two courses. The beginners' course, which is at the same time the introduction to the study of Comparative Philology, was carried on for two hours through the year: it consists of the elements of Sanskrit grammar explained from the comparative point of view, and the critical reading of an easy text. A second, more advanced course, continued the study of Classical Sanskrit with readings in the Nala and Hitopadeça. Mr. F. R. Blake, Fellow in Sanskrit, helped to conduct both of these courses.

The work in Comparative Philology was four-fold. First, a course in the elements of physiological phonetics was carried on in conferences lasting from the beginning of the session to Christmas. Secondly, a course in Comparative Philology, with a sketch of the linguistic ethnology of the Indo-European languages, i.e., the usual topics of Linguistic Science, with special reference to the early history of the Indo-European peoples. Thirdly, a series of lectures in the Comparative Grammar of Greek, Latin, Teutonic and Sanskrit vowels and vowel-relations (ablaut). Fourthly, an advanced course in Lithuanian, in continuation of the one offered for the first time at this University during the last session. Aside from the constant study of the grammatical structure of this interesting language, readings from the folk-tales (pasakos) and folk-songs or ballads (dainos) were carried on by a group of advanced scholars. During the next session the Lithuanian will be followed up—again for the first time at this University—by the study of an ancient Slavic language, the Old-Bulgarian or Church-Slavonic.

Maurice Bloomfield,  
Professor of Sanskrit and Comparative Philology.

Oriental Seminary.

Twenty courses in the various departments of Oriental research have been given during the past year, particular attention being paid to Hebrew, Assyrian, and Comparative Semitic Grammar.

To the study of the Old Testament were devoted seven hours weekly through the year. Professor Haupt gave a critical interpretation of the Book of Job. He also conducted, weekly through the year, a class for the study of the Book of Genesis, special attention being paid to a minute philological analysis. Under the guidance of Dr. Johnston, a class met, one hour weekly throughout the year, to read at sight selected portions of the Historical and Poetical Books of the Old Testament. Professor Haupt conducted weekly exercises in Hebrew Prose Composition, the students
translating idiomatic English sentences into Hebrew. The instruction in
*Elementary Hebrew*, two hours weekly, was given by Professor Haupt,
assisted by the Fellow in Semitic, Mr. Grimm.

In *Biblical Aramaic*, Professor Haupt interpreted the Aramaic portions
of the *Book of Ezra*, and discussed Aramaic Grammar from a comparative
point of view.

In *Syriac*, Dr. Johnston read with the class, during the first half-year,
selected portions of the *Chronicles of Bar-Ebhrdyd*.

In the *Assyrian Seminary*, which met weekly through the year, Professor
Haupt discussed the formation of the *Assyrian Verb and Noun*. During the
second half-year, Professor Haupt conducted a weekly course in *Assyrian
Prose Composition*, the members of the class rendering English and Hebrew
sentences into Cuneiform. Dr. Johnston met the second year's students
in Assyrian weekly, interpreting *Assyrian Historical Texts* in Meissner's
Assyro-Babylonian *Chrestomathy*. He also gave a more advanced course,
explaining some of the more difficult reports and dispatches in Harper's
*Corpus Epistolorum*.

Professor Haupt gave, during the first half-year, a course in *Sumerian*,
explaining the structure of the language and interpreting selected bilingual
texts.

In *Arabic*, Professor Haupt conducted a weekly course of exercises in
*Arabic Prose Composition*. Dr. Johnston gave elementary instruction in
Arabic weekly through the year, Socin's *Arabic Grammar and the Beyrout
Chrestomathy Majdnt-et-Adab* serving as text-books. With the second year's
students he read selections from Brunow's *Chrestomathy*. For the
advanced students he interpreted, during the first half-year, selected *Suras
of the Koran*, and during the second half-year the story of *Queen Bilqis*.

In *Ethiopic*, Professor Haupt, after some introductory lectures on the
comparative grammar of the Geez language, interpreted selections from
Dillmann's *Chrestomathia Aethiopica*.

Professor Haupt lectured one hour weekly through the year on the
*Comparative Phonology of the Semitic Languages*.

At the beginning of the second half-year Dr. Johnston formed a class for
the study of *Ancient Egyptian*, Erman's *Egyptian Grammar* serving as
text-book. Dr. Johnston also delivered a series of lectures, during the first
term, on the *History of Ancient Egypt*, and during the second term on
*Egyptian Religion and Mythology*, illustrated by archaeological objects from
the Egyptian collection of the Johns Hopkins University.

Three volumes of the new English Version of the *Sacred Books of the Old
and New Testaments*, published under the editorial direction of Professor
Haupt, were issued, viz., the *Book of Leviticus*, by S. R. Driver and H. A.
White, of Oxford; the *Book of Joshua*, by Professor W. H. Bennett, of
London; and the *Book of Ezekiel*, by Professor C. H. Toy, of Cambridge,
new volumes have been in type for some time, and will appear before the
end of the year. They comprise the Book of Isaiah, with Critical Notes by Professor T. K. Cheyne, of Oxford; the Book of Ezekiel, by Professor C. H. Toy, of Harvard University; and Judges, by Professor G. F. Moore, of Andover.

The first part of the fourth volume of the Contributions to Assyriology and Comparative Semitic Philology, published with the cooperation of the Johns Hopkins University, and edited by Professor Haupt in conjunction with Professor Friedrich Delitzsch, of Berlin, appeared at the beginning of the second half-year. The volume contains an important treatise on the Position of Woman in Babylonia according to the Cuneiform Contract Tablets from the time of Nebuchadnezzar to Darius Hystaspis (604-485), by Victor Marx; Remarks on the Legal Literature of Babylonia, by Professor Friedrich Delitzsch; The Letters of Hammurabi to Sin-iddinum (with two autographed plates), by Professor Friedrich Delitzsch and Dr. J. A. Knudtzon; and the results of a most valuable Collation of the el-Amarna Tablets in the Museums of Berlin, London, and Gizeh, by J. A. Knudtzon.

Professor Haupt read four papers before the Society of Biblical Literature at its annual meeting in New York, during the Christmas recess, viz., (a) Skin for Skin; (b) A Reference in the Tel el-Amarna Tablets to the Temple of JHVH in Jerusalem; (c) The River Chebar; (d) The Hebrew Cubit. Abstracts of the last three papers are given in the notes on Joshua and Ezekiel in the Polychrome Bible (see Joshua, p. 54, l. 24; Ezekiel, p. 93, l. 16, p. 179, l. 34). He also presented four communications to the American Oriental Society at its meeting in Cambridge, Mass., April 6-8, viz., On some New Volumes of the Polychrome Bible; The Vowels of the Preformatives of the Imperfect in Semitic; Gog and Magog; The Name Jerusalem. (The second of these papers will appear in the Journal of the American Oriental Society; an abstract of the last paper is given in the Critical Notes on the Hebrew text of Isaiah in the Polychrome Bible, p. 100; for Gog and Magog, see op. cit., Ezekiel, p. 93.) He also read two principal papers before the University Philological Association, entitled Archeological Comments on Ezekiel and Biblical Studies, on February 17 and April 21, respectively, besides giving, on April 17th, before the Johns Hopkins Hospital Historical Club, a lecture on Medical and Hygienic Features of the Bible.

Dr. Johnston read at the meeting of the University Philological Association, on November 18, a paper entitled "An Explanation of an Assyrian Crux Interpretum" (since published in the American Journal of Philology, Vol. XIX, pp. 334-383). He also presented two communications to the American Oriental Society: (a) A Recent Interpretation of the Letter of an Assyrian Princess, (b) Explanation of Two New Assyrian Words in the Epistolary Literature (idmitsu, pags), both of which are printed in Vol. XX, part 2, of the Journal of the American Oriental Society. A paper by Dr. Johnston entitled, "On a Passage in the Babylonian Nimrod Epic" appeared in Vol. XVI of the American Journal of Semitic Languages (pp. 30-36).
German.

The Fellow in Semitic, Mr. K. J. Grimm, presented himself for examination for the degree of Ph. D. The title of his dissertation is *Euphemistic Liturgical Appendizes in the Old Testament*, his principal subject being Biblical Philology, and his subordinate subjects Assyriology and Philosophy.

**Paul Haupt,**
**Professor of the Semitic Languages.**

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German.

The German Seminary, under the direction of Professor Wood, met three times weekly, through the year. The subject for the first half-year was "Storm and Stress" and Early Romanticism. These two themes were studied as parts of one continuous development in German literature. The dependence of Romanticism upon the earlier movement was shown in the return to the German past, in attention to local coloring, and in the development of style. The authors studied were Goethe, Lenz, Klinger, Maler Müller, Tieck and the Schlegels. During the second half-year the poems of Walther von der Vogelweide were studied. Lachmann's critical apparatus was used as a basis, together with the reprints of MSS. A, B, and C. The attempt to establish a relative chronology for groups of Walther's poems, begun in an earlier course, was continued. In the study of his style, particular attention was given to Walther's concrete expression of thought, as contrasted with modern writers, and to new poetical comparisons invented and defended by him. The English Elizabethan song writers were freely used in illustration.

The Germantic Society, which is composed of the Director of the Seminary and the Instructors and Graduate Students in German, held fourteen meetings during the year, in an afternoon session. Besides reviews and reports, the following papers were read, some of them presenting completed investigations, and others giving preliminary results of studies still in progress: The Hexenküche in Goethe's Faust; Early influence of German literature in America; The prologue in the early German dramas; The elements of Romanticism in "Sturm und Drang"; Wilhelm Heinse and the "Stürmer und Drängler"; Interpolations in Ezzo's Gesang; The interrelation of the later pre-Lutheran Bibles; Scribes and Dialects in the "Wenzelbibel"; The origin of the first printed German Bibles, as tested by the types of the first person plural imperative; Recent contributions to the study of Hartman von Aue (I); *Hete* in rime-position in Middle High German; The distribution of the preterite Tenses of *haben* in rime-position in Middle High German.

Professor Wood gave a course in Gothic and the Elements of Comparative German Grammar, twice weekly, through the year. Braune's *Gotische
Grammarik was studied, after which parts of Ulphilas and the Skeireins were interpreted, with Bernhardt's larger text as a basis. Kluge's *Vorgeschichte der altgermanischen Dialekte* (Paul's Grundriss, second edition) was read in part, and was accompanied by practical exercises designed to illustrate the principles of sound-change and word-formation for the several Teutonic languages.

Professor Wood read, with a class in Old High German, weekly, through the year, parts of Otfrid's *Evangelienbuch*. Erdmann's edition was used as a basis. The first book, and part of the second, were read, and recent contributions on Otfrid's text, style and metre were discussed. Professor Wood also conducted a course in Old Norse, weekly, first half-year, and twice weekly, second half-year. Holthausen's *Altisländisches Elementarbuch* and Noreen's *Grammatik* were studied, after which selections from Gylfaginning and the sagas were read in Holthausen's *Lesebuch*.

In the undergraduate major course, Professor Wood conducted a class, twice weekly, during the first half-year, in Goethe's Faust, the First Part of which was read. During the second half-year, the same class read Schiller's Wallenstein (Lager), and die Piccolomini; Wallenstein's Tod was assigned as private reading.

In the minor course A, Professor Wood conducted weekly exercises in prose composition.

Associate Professor Vos conducted a class, twice weekly, during the first half-year, in Middle High German, in which, after a study of Phonology, Inflection, and Syntax (Paul's *Mittelhochdeutsche Grammatik*), selections from the Nibelungenlied were read.

He also gave a course, twice weekly, during the first half-year, in Middle Dutch. Franck's *Mittelniederländische Grammatik mit Leseübungen* was used as a text-book, and considerable portions of Middle Dutch prose and verse were read in class.

During the second half-year, he lectured, weekly, on the History of Rime in Old High German. The origin of rime in German, the etymology of the word, rime in Old High German alliterative poetry, the rime-technic of Otfrid's *Evangelienbuch* and other Old High German rimed verse were considered in detail.

A course in Vondel as lyric poet was also conducted by him, weekly, second half-year. Vondel's lyric poems, inclusive of the choric song of the drama, were studied in the edition of van Lennep-Unger, and an attempt was made to trace the development of Vondel's language (van Heltien, *Vondel's Taal*) as well as of his poetic art.

The following undergraduate courses were also conducted by Associate Professor Vos:

- History of German Literature, Classical Period (Major Course). Koch's *Geschichte der deutschen Literatur* was used as text-book, and illustrative extracts were read from Hopf und Paulsiek's *Deutsches Lesebuch*. 


In the minor course A, the following works were read in class: von Wildenbruch, Das edle Blut; Chamisso, Peter Schlemihl; Schiller, Maria Stuart; Goethe, Hermann und Dorothea. As heretofore, some attention was paid to the study of the metrical form of the last two works. Freytag’s Doktor Luther (in part) was assigned as private reading.

In the elementary course, for students in the preliminary year, Thomas’s Practical German Grammar (Parts I and II) was used as an introduction to the language. Considerable time was also devoted to oral drill in connected discourse. The larger part of Super’s Elementary German Reader, and five short German plays from the collection of E. S. Buchheim were read in class.

Dr. T. S. Baker gave a graduate course, weekly, through the year, on The Contemporary German Drama. Lectures were given on German literature since 1870, after which plays by Gerhart Hauptmann, Hermann Sudermann, Ernst von Wildenbruch, and Ludwig Fulda were read and discussed.

Dr. Baker gave undergraduate courses, as follows:

Minor Course. Class B. Four hours weekly. Otis, Elementary German (First part); Brandt, German Reader (60 pp.); von Moser, Der Bibliothekar; Goethe, Egmont; Wildenbruch, Der Letzte; Stein, Exercises in Prose Composition.

Elective Course. Readings in Contemporary German Literature. Two hours weekly. Sudermann, Die Schmetterlingsschlacht; Seidel, Leberecht Hühnchen; Ebner-Eschenbach, Miterlebtes (40 pp.); two stories by Wildenbruch, edited by Schmidt (90 pp.).

Scientific German Readings. Twice weekly. Brandt and Day, German Scientific Reading (110 pp.); Cohn, Über Bakterien; Helmholtz, Goethe’s Naturwissenschaftliche Arbeiten.

Mr. Julius Hofmann gave a course, for graduates, in Scientific Readings, twice weekly, Dippold’s Scientific German Reader being used as a textbook. He also conducted, in the major course, weekly exercises in prose composition, and met a class, weekly, for exercises in Conversational German. German poems were used as a basis for these exercises, and topics were taken from the scholar’s life, text-books, and the lecture room.

Mr. Kurrelmeyer, Fellow in German, met a class of graduate students from the departments of languages and history, twice weekly, for the reading of historical prose. Hoffmann, Historische Erzählungen (in part), Seiler, Die Heimat der Indogermanen, and Lange, Athen im Spiegel der aristophanischen Komödie, were read.

Henry Wood,
Professor of German.
1. Advanced Courses.

Professor Bright conducted the English Seminary, which met twice a week (four hours) throughout the year, in the study of the Liturgical Drama and of the Mystery Plays. The dramatic elements of the liturgy were collated, and the transition from Church service into dramatic presentation was traced with the help of the investigations of Mone, Milchsack, Lange, Wirth, and Froning. The four cycles of Mystery Plays were studied separately and in comparison with each other, and with all the surviving separate plays. The Towneley group was read with special reference to minute textual interpretation, and taken as a basis of comparison in the complete study of the subject. Attention was also given to the history of the crafts and the gilds, to the rise and decline of fairs, and to the manner of staging the plays.

Professor Bright conducted a class in the critical and historical study of the Poems of Shakespeare. The Venus and Adonis was critically read as a type of "contamination" of literary "fable," with reference to the author's use of Ovid, his debt to contemporary poets, the relation of the poem to Constable's Shepherd's Song of Venus and Adonis, and the influence of the poem upon John Marston, William Barksted, Henry Austin, and James Gresham. The Rape of Lucrece was studied in a similar way, and the Sonnets were read critically, and all the important theories of interpretation were reviewed and tested.

During the first half-year Professor Bright lectured (once a week) on the Old English Dialects; and in the second half-year (twice a week) on Old English Phonology.

The members of the English Seminary were met (by Professor Bright) as a Journal Club (fortnightly, two hours) for reports on the current periodicals (linguistic and literary), for reviews of new books, and for the reading and discussion of original papers.

Professor Wm. Hand Browne delivered two courses of lectures (weekly, throughout the year). The first was on the poets of the Caroline period, showing the decadence and perversion of the romantic poems and ideals, and the transformation which the literature underwent in the last half of the seventeenth century. In the drama, attention was called to the persistence of the school of Jonson, and its partial supersession by the new comedy, or "comedy of manners," and to the revival of the drama of pathos by Otway. A short course was given on the principles of literary criticism, in which the questions were discussed, whether a science of criticism be possible, and if so, on what grounds it must rest.

2. College Courses.

The English major class met Professor Bright, twice a week, through
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the year, for the study of Anglo-Saxon, using as a text-book Bright's Anglo-Saxon Reader.

This class also met Professor Browne twice a week. One hour weekly was given to the study of the Scottish Poets from Barbour to Lyndsay; and one hour weekly to (1) the Elizabethan literature, (2) the literature of the fourteenth century.

The English minor class was conducted by Professor Browne. The class studied Early and Middle English texts (two hours a week), using Morris and Skeat's Specimens as the text-book, and English literature (two hours a week), using Saintsbury's Short History of English Literature.

A class in Rhetoric met three times weekly, throughout the year. During the month of October this class was conducted by Professor Greene. Early in November the class was divided, upon the basis of rank, into two sections; the second section was instructed by Mr. William T. Thom. Theory was imparted by means of text-book (A. S. Hill's Principles of Rhetoric), lectures, and discussions; practice was obtained by the frequent writing of short papers, a few of which were read and criticised in the class-room, and by the writing of longer papers, which were read and criticised privately with the writers. The weekly practice in writing was combined with an examination of the usage of standard writers. Each member of Section A made a careful study of the style of one prose author (usually of a nineteenth century author), and presented the results of his study in a series of short papers. The class-work included a study of representative passages of description and narration (Baldwin's Specimens of Prose Description; Brewster's Specimens of Narration). The members of Section B made a careful study of specimens of standard prose, as contained in Brewster's Studies in Structure and Style.

A class in English Literature met Professor Greene three times weekly, throughout the year. This class made a general survey of English Literature from the beginning to the first quarter of the seventeenth century. A detailed study was made of the works of Chaucer, Spenser, and Shakspere. Of the writings of these poets, a considerable amount was critically studied in the class-room; and much more was read by the members of the class in their private reading. Each member of the class prepared two essays. In addition to the regular class-room exercises, two readings from the poems of Chaucer and twelve lectures upon the dramas of Shakspere were given for the benefit of those members of the class who desired to attend them.

An elective course in English Literature was given by Professor Greene, twice weekly, throughout the year. During the first half-year the study was centered upon the works of Dryden, Steele, Addison, Swift, and Pope; during the second half-year, upon the works of Wordsworth, Coleridge, Keats, Shelley, and Byron. In connection with the weekly lectures and discussions the members of the class did a large amount of private
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reading. In addition to shorter papers, each member of the class prepared and read before the class an essay upon one of the principal writers studied.

James W. Bright,
Professor of English Philology.

William Hand Browne,
Professor of English Literature.

Herbert Evereth Greene,
Collegiate Professor of English.

Romance Languages.

I. Graduate Courses:

Professor Elliott conducted advanced courses as follows:

Romance Seminary. Two hours a week, through the year.

The work centered here on the Fables of Marie de France, of which it is proposed eventually to issue a critical edition based on the original manuscripts. The object of the course has been to acquire a working knowledge of the fable literature of antiquity and the middle ages; to become acquainted with the characteristics of the Norman and Anglo-Norman dialects in which some of the more important manuscripts are written; to present the fundamental principles of text-criticism and text-constitution, for which two fables were examined. These were based on five English and fifteen French manuscripts. A clear view of the morphology and phonetics of the language was obtained as contrasted with those of the Isle-de-France. In addition to this, much new material bearing on the history of medieval fable literature was also presented. Professor Elliott directed the text-constitution and criticism in this work, while the comparative study of the selected fables was undertaken by the members of the Seminary under the supervision of Dr. Keidel, and reports were presented which embodied the chief results of the special investigations made by each student.


The object here was to give the student an introduction to the phonetics and morphology of Folk- and Low-Latin as the common basis for a scientific study of the modern Romance idioms. Meyer-Lübke's treatment of the subject in Grüber's Grundriss der romanischen Philologie was taken as the starting-point for this work, in connection with which lectures were given, contrasting the popular forms with the historic development of the classical forms. The material in the Pros Consilium was classified and the popular forms worked out on the basis of Schuchardt's Vocalismus des Vulgärlatein. Budinzy's Ausbreitung der Lateinischen Sprache, D'Arbois de Jubainville's Dictionaire latine en Gaul, Bonnet's Le Latin de Grégoire de Tours, Wölflin's
Archiv für lateinische Lexicographie, and Seelmann's Aussprache des Latein
were constantly used in connection with this course.

Romance Club. Weekly.
The object of this organization, to which all members of the Romance
Language department belong, is to foster a common interest in everything
that concerns the study of the Romance idioms. Reviews of important
journal articles, papers on original investigations, discussions of literary and
scientific subjects, reports of correspondence of a professional nature, rep-
resent the chief exercises that claim the attention of the club.

French Dialects. Weekly.
The Western dialects were especially considered; in addition to this,
the Burgundian and Champagne were treated. The method of work
was, to a great extent, practical, and had in view a sufficient acquaintance
with dialect forms to enable the student to discriminate Old-French texts
belonging to these different idioms. To this end the leading characteristics
of the old and the modern dialects were presented in a few lectures; then,
through the use of early and later texts, the student was required to
recognize and name the dialect features as they occurred.

Lectures on Dante. Weekly.
The object of this course was to give the student a survey of the Dante
science of to-day. In a few introductory lectures he was made acquainted
with the leading philosophical and literary tendencies of Dante's time,
the Inferno and Purgatorio ideas before the author's epoch. The Inferno
was then analysed and presented in detail, both with reference to the
previously existing ideas of punishment and recompense and to those
peculiar to Dante.

Professor F. M. Warren, of Adelbert College, gave a course of twenty
lectures on the Epic of Antiquity, in the months of January and February.
The four leading poems of the cycle—Thébès, Troie, Énéas, and Alexandre—
were studied in reference to their probable antecedents in Latin prose
romances, and their significance as the earliest representative of artistic
composition in the vernacular. Attention was called to their sociological
importance, to their characteristics of love and combat which made them
typical of the age, and to their influence on the form and context of
subsequent French Literature.

Professor Warren also delivered a course of twelve lectures on Realism
and Naturalism in French Literature. Eight of the lectures were open
to the public. After tracing the beginnings of Realism among the authors
of the eighteenth century, the discussion turned to the consideration of
the theories and work of Stendhal, Mérimée, Balzac, Flaubert, the De
Goncourt, Baudelaire, Daudet, and Zola.

Dr. Marden conducted the following courses:
Spanish Philology. Two hours weekly.
The students used Gorra, Lingua e Letteratura Spagnuola, and Baist, Die
Courses of Instruction, 1898–99.

Spanische Sprache, in connection with a course of lectures on Spanish phonology and morphology. Every fourth meeting was a quiz, for which the students prepared selected texts and made practical application of the laws deduced in the lectures.

Old-Spanish Readings. Weekly.

After mastering the selections in Gorra’s Chrestomathy, the class read in full Morel-Fatio, Textes castillans inédits du XIIIe siècle, and Lidforss, Los Cantares de Myo Cid. The aim of the course was to give the students a reading knowledge of Spanish of the twelfth, thirteenth, and fourteenth centuries.

Lectures on the beginnings of Spanish literature. Weekly.

The first two lectures were chiefly historical, describing Spain as a Roman province and showing the political, social and intellectual conditions of the people before the Germanic invasion. Then followed the influence exerted by the Goths, the Arabs, the Jews, and the French. A special feature of the course was a study of the early prose chronicles and their value as a means of preserving the earlier narrative poetry of Spain. The work ended with a study of the Poema del Cid.

Dr. Armstrong conducted the following courses:

Phonology and Morphology of Old French. Three hours weekly.

In this course there was given a detailed view of Old-French vowels, consonants, and flexion, with especial reference to the historical connection on the one hand with Folk Latin and on the other with Modern French. Attention was directed chiefly to the language of Central France, other dialects being considered only for purposes of comparison. Two hours each week were given to lectures; a third was employed in the application of the principles already treated to a portion of the text of the Chanson de Roland, and in discussion by the instructor and students of obscure or difficult points.


A brief view of general principles and of existing phonetic schools was followed by a description of the organs of speech and a detailed examination of the mode of formation of French sounds.

Italian Historical Grammar. Two hours weekly.

The course consisted in lectures on the phonology and morphology, with exercises in practical application by the class.

Dr. Rambeau conducted the following course:


Lectures upon the history of phonetics, its importance for the teacher of modern languages and the philologist, the physiology of speech, the phonetic system of the French language, especially vocalism (Parisian standard), basis of articulation. Practical exercises in connection with the study of phonetic texts illustrating different styles, prose and poetry (Chrestomathie française, by A. Rambeau and Jean Passy).
Dr. Ogden conducted the following course:

The object of this course was to awaken and stimulate an interest in the literature of fiction in the nineteenth century in France. In order to give a connected survey of the entire field, part of the course was devoted to the rise and growth of the novel from the beginning of the seventeenth century, but the main subject for consideration was the later manifestations of our own time. The evolution of the type was presented, reaching from Rousseau, Chateaubriand, and the personal in fiction, to Realism and Idealism, Naturalism, Impressionism, and the Symbolistic School of the present day. The desire was to furnish an idea of the general trend of movement, to give the relation of succeeding schools or phenomena in fiction, and to urge the student to pursue the subject from a personal inclination.

Dr. R. H. Wilson conducted the following courses:
Lectures on French Syntax. Two hours weekly.

The general linguistic value and speech-setting of the Adjective was first considered, after which the Romanic Adjective was studied in the light of its differential phenomena. The French Adjective was employed for illustration save in those cases where inter-Romanic divergence necessitated a closer scrutiny of some other Romance idiom. A feature of this course was the collection and presentation of some new material on the Comparative in Romance.

Old-French Readings. Two hours weekly.

The instruction was carried on partly by lectures, partly by class-work. The intent was to impart an appreciation of the more important linguistic phenomena presented by the French of the twelfth and thirteenth centuries, and, at the same time, to call attention to the appearance and disappearance of literary tendencies. The following Old-French texts, read by the class, formed the basis of investigation: La Vie de Saint Alexis, La Chanson de Roland, Grant Mal fet Adam, Aucassin et Nicolette, Les Lais de Marie de France, Le Chevalier au Lyon, De Venus la Deesse d'Amor.

Dr. Keidel conducted the following courses:
Romance Methodology. Weekly, first half-year.

The general principles of library research, proof-reading, thesis-writing, and bibliography were explained and fully illustrated by numerous concrete cases of actual personal experience.

Romance Palæography. Weekly, second half-year.

A short and succinct account was given of the various schools of writing developed on Romance territory during the middle ages, followed by practical exercises in the deciphering of facsimiles of Old-French manuscripts. This course was intended to fit students for the real work of copying medieval manuscripts in the great European libraries.
II. Undergraduate Courses.

Dr. Rambeau conducted the following courses:

French: Minor Course A. Four hours weekly.

Short outline of the History of French Literature (xvii-xixth Centuries), and reading of Contes, Novels, and Dramas.

Mérimée, Colomba; Béranger's Chansons, and a few other poems (Chrestomathie by Rambeau-Passy); Victor Hugo, Hernani; Molière, Le Bourgeois gentilhomme; Coppée, Contes, On rend l'argent. Private reading: Malot, Sans famille; Thiers, Expédition de Bonaparte en Égypte; Sarcey, Le Siège de Paris; Fortier, Histoire de la littérature française, Parts III, IV, V (with numerous omissions; the principal tendencies and movements, the most important writers, and all the authors of works read by the students).

Modern French Comedy.

Scribe and Legouvé, Bataille de dames; Angier, La Pierre de touche; Pailleron, Le Monde où l'on s'ennuie.

(In connection with 1 and 2) Short lectures, frequently in French, upon various subjects of literature and related topics (cf. previous reports); exercises in pronunciation (Sound Charts and Rambeau-Passy); a few essential features of versification; elements of French conversation; oral reports, in French, upon authors and passages of works read by the students.

Syntax and Prose Composition.

Beuvier's Grammar, Part III (Syntax); Logie's Exercices, XII-XXI; Kimball's Exercices based on Colomba, Nos. 1-19; a few short essays upon authors and subjects connected with the private reading and class work.

French: Major Course. Four hours weekly.

Outline of the History of French Literature from the beginning to the XIXth Century, especially the XVIIIth Century; study of Classical Tragedy and Comedy.


The Romantic Movement and Contemporary Literature.

Victor Hugo, Notre Dame de Paris; Bug-Jargal (private reading); Les Travailleurs de la mer (for the greater part private reading); Ray Blas; Lyrics (Bowen, Warren, and Rambeau-Passy). Musset, Lyrics (Kuhns, Bowen, and Rambeau-Passy) and Comedies (Kuhns). Béranger, Lamartine, Leconte de Lisle, Sully-Prudhomme, Coppée, and other poets (Bowen and Rambeau-Passy).

(In connection with 1 and 2) Lectures, mostly in French, upon various subjects of literature and related topics (cf. previous reports); exercises in pronunciation (Sound Charts and Rambeau-Passy); principal laws of versification, the Alexandrine verse, Classical and Romantic; French conversation;
oral reports, in French, upon authors and works, or passages of works, read by the students.

Study of Idioms and Prose Composition.

Storm, French Dialogues, Ch. VI-XII; exercises on idiom and syntax, based upon these dialogues, Ch. VII-XI and, partly, VI and XII. Essays with reference to subjects and authors read by the students.

Italian: Minor Course. Four hours weekly.

Grandgent, Italian Grammar, with exercises, Nos. 12-20; Italian Composition, Part I, Nos. 1-7.


Exercises in pronunciation; elements of conversation; essential features of Italian versification; short lectures (sometimes in Italian) upon Italian history and literature and other subjects connected with the class work.

Dr. Armstrong conducted the following course:

French: Elementary course. Three hours weekly.

Whitney's Brief French Grammar was completed and additional practice in translation into French was given, with François' Prose Composition as a text-book. The class read Van Daell's Introduction to French Authors; Daudet, La Belle Nivernaise.

Dr. Ogden conducted the following courses:

French: Minor B. Four hours weekly.

The aim of this course, above all, is to prepare the student for an intelligent reading at sight, and is largely attended by candidates for the Doctor's degree who require proficiency in sight translation. With this object in view, comparatively little time is spent on grammatical composition, but, as soon as practicable, the class is started on easy prose. From this was drawn all illustration of necessary points of grammar. The first term of the past college year was devoted to acquiring a fundamental knowledge of the language, with easy prose reading. The remainder of the time was given to a rapid study of French prose, which was chosen so as to increase in difficulty as proficiency was attained. Translation at sight was also considered important. The text-books used were: Whitney's Brief French Grammar; Super's French Reader; L'Évasion du Due de Beaufort, by Dumas; Colomba, by Mérimée; Le Gendre de M. Poirier, by Augier; Le Monde où l'on s'ennuie, by Pailleron.

French: Elective, Section II. Two hours weekly, second half-year.

Short stories by De Musset, Gautier; parts of Notre Dame de Paris, by Hugo; Le Roi des Montagnes, by About.

Dr. Keidel conducted the following courses:

French: Elective, Section I. Two hours weekly.

Short stories of Daudet, Coppée, and Theuriet, followed by a complete
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perusal of Victor Hugo's 
Cassette (Les Miserables, Vol. II), with especial
attention to his description of the Battle of Waterloo.

French: Elective, Section II. Two hours weekly, first half-year.
Short stories of About, Gautier, and De Musset; and selected chapters
of Victor Hugo's Notre Dame de Paris.

Dr. Marden conducted the following courses:
Spanish: Minor Course. Four hours weekly.

After a few lessons in Manning's Spanish Grammar, reading was begun
in Matzke's Spanish Reader and continued to Christmas. The class then
read in full Alarcón, El Capitán Veneno; Tamayo y Baus, Un Drama
Nuevo; Bretón de los Herreros, La Independencia. Exercises in grammar
and prose composition were continued throughout the first term, and
informal talks on Spanish literature were given during the second term.

Spanish: Elective. Two hours weekly.
As soon as the students had mastered a few important facts of Spanish
grammar, the class began reading selections from Matzke's Spanish Reader.
This was followed by Tamayo y Baus, Un Drama Nuevo, and about 50
pages from Galdós, Doña Perfecta.

Dr. R. H. Wilson conducted the following course:
Italian: Elective. Two hours weekly.
The purpose of this course is to ensure a working knowledge of modern
Italian. The instructor thought to accomplish this end rather by means of
continuous reading than by laying stress on grammatical exercises. The
class devoted six recitations to Grandgent's Italian Grammar, after which
the work was confined entirely to the interpretation of modern Italian.
The following texts were read in class: De Amicis, Camilla; Verga, Cavaleria Rusticana; Capuana, Homo; De Amicis, Alberto.

A. MARSHALL ELLIOTT,
Professor of Romance Languages.

History, Politics, and Economics.

These kindred subjects have remained under one administrative head—
Professor Herbert B. Adams, who has general direction of the depart-
ment and of its publications. His immediate colleagues are Associate
Professors J. M. Vincent, in History, and Sidney Sherwood, in Economics;
Associates W. W. Willoughby, in Politics, B. C. Steiner, in American
History, J. H. Hollander, in Finance, and J. C. Ballagh, in Classical His-
tory. Dr. G. C. Lee is Instructor in History, Public Speaking, and Debate.

Among the works published in connection with this department are
(1) The Financial History of Baltimore, by Dr. J. H. Hollander, Extra
Volume XX in the University Studies; (2) Anglo-American Relations

In the regular series for 1899, or Volume XVII, in the University Studies, the following numbers have been already published: I-III, History of State Banking in Maryland, by A. C. Bryan; IV-V, History of the Know-Nothing Party in Maryland, by L. F. Schmeckebier; VI, The Labadist Colony in Maryland, by B. B. James.

In a list of recent publications in History, Politics, and Economics prepared for the University Circulars, June, 1899, more than 300 titles of published monographs, papers, articles, and minor contributions are credited to present or past members of this department. In the list published in the University Circulars, February, 1897, there were 119 titles.

A special feature of graduate training during the past year has been brief courses of lectures by men who have taken the degree of Doctor of Philosophy in the Historico-Political Department, and who have already served as lecturers in other institutions. For example, Dr. J. M. Callahan, who, during the year 1897-98, was a substitute for the regular professor of history in Hamilton College, gave, in November and December, 1898, to Hopkins graduates, a course of twelve special lectures on "Cuba and International Relations," a series now printed as Extra Volume XXI of the University Studies in History and Politics. (For topics and abstract of lectures, see University Circulars, March, 1899.) Another example is that of Dr. John H. Latané, Albert Shaw Lecturer for 1899 on American Diplomatic History, and recently called to the professorship of history in Randolph-Macon Woman's College, in Lynchburg, Virginia. In January, 1899, he gave a select course of historical lectures on "The Diplomatic Relations of the United States and Spanish-America" to an audience of Baltimore teachers and students. (See University Circulars, March, 1899.) An outline of topics and a list of good books on Spanish-America were published in this connection.

As an earlier step leading to this kind of graduate training, it is worthy of note that a short series of single lectures has been given by individual graduate students in April and May, 1899, on "Nineteenth Century Statesmen," in a cooperative class course. Such representative men were chosen as Jefferson, Canning, Gladstone, D'Israeli, Disraeli, Thiers, Lamartine, Louis Napoleon, Gambetta, Cavour, Talleyrand, Metternich, and Burke. The lectures were not read, but were given extem-
pore from a blackboard syllabus, and were subjected to criticism by Dr. Adams and the class.

I.—HISTORY.

Professor Adams has conducted the following courses of instruction:

1. *Historical and Political Science Association*. Two hours fortnightly through the year, with twenty-eight graduate students. This Association is the outgrowth of the original Historical Seminary, and constitutes a general clearing-house for the more important and original work of the whole department.

The proceedings of the Historical and Political Science Association from March 18 to November 3, 1898 are published in the University Circulars for December, 1898; from November 17, 1888 to March 3, 1899, in the Circulars for March of the current year. Of the papers there mentioned, the following have been accepted or presented as Doctors' dissertations, and have been or will be printed: (1) The Know-Nothing Party in Maryland, by L. F. Schmeckebier; (2) Robert Goodloe Harper, by C. W. Sommerville; (3) The Chesapeake and Ohio Canal, by G. W. Ward; (4) History of Highways in Maryland, by St. G. L. Sioussat; (5) The Life of Commissary James Blair, by William and Mary College, by D. E. Motley; (6) The Public Services of Jacob Dolson Cox, by J. R. Ewing; (7) Religious Freedom in Virginia (1760-1802), by W. T. Thom.

Other important papers reported to the department and ready for early publication in the *Studies* are: (1) History of Slavery in North Carolina, by J. S. Bassett; (2) Slave Trade and Slave Population in Virginia, by J. C. Ballagh; (3) History of Suffrage in Virginia, by J. A. C. Chandler; (4) Admission of Iowa into the Union, by J. A. James; (5) The Colonial Executive prior to the Restoration, by P. L. Kaye.

2. *History of Civilization in the Far East*, with a class of thirty-two students, including nine graduate students, two hours weekly through the year. This course related more especially to the historical development, institutions, and religions of China, Japan, and India, ancient and modern. The present importance of the Far East and the establishment of European spheres of influence in Chinese territory made the Middle Kingdom and the Japanese empire very interesting subjects of contemporary as well as historical study by American youth.

3. *Germanic History*, with a class of twenty-nine graduate students, two hours weekly, first half-year. In this course attention was directed to the origin, migration, conflicts, settlements, institutions, and historic relations of early Germanic peoples.

4. *Anglo-American Institutions*, with thirty graduate students, two hours weekly, second half-year. This course was in continuation of Course 3, and related especially to early English institutions of Germanic origin, and to their continuity in the New World.
History, Politics, and Economics. 

5. History of the Nineteenth Century, with thirty graduate students, one hour weekly through the year. This course related chiefly to Spain, Portugal, the South American Republics, France, Germany, and Italy in the nineteenth century.

6. Educational History, with a class of 117 Baltimore teachers, public and private, with 191 other teachers in regular attendance as hearers of a course of ten lectures Friday evenings, in McCoy Hall, from November 11, 1898 until January 18, 1899. The class handed in, from week to week, written exercises based upon certain required reading and printed questions set by the lecturer. The attendants were simply hearers of the lectures and not doers of the work. A final essay upon some historic-educational subject was required of the class, together with a written examination based upon private reading and the course of lectures. At the close of this so-called "Teachers' Course" a simple certificate was awarded to 66 successful competitors for their regular attendance, class work, essay, and final examination. The following were the subjects of Dr. Adams's lectures:

(1) Chinese and Japanese Education; (2) Hebrew Education; (3) Classical Education; (4) Mediaeval Schools and Universities; (5) Public Education in England; (6) Public Education in Germany; (7) Educational Movements in Modern France; (8) Summer Meetings for Teachers in Edinburgh and Paris; (9) University Extension and a Cambridge Summer Meeting; (10) A Summer Meeting of Teachers at Chester, England. The three lectures last named will appear in the current Report of the Commissioner of Education for 1898-99. The others, and perhaps the entire series, will be published in a special volume of Lectures or Studies in Educational History. In connection with each of the above lectures was printed an "Outline," with "Questions," and occasional lists of "Authorities" and "Books of Reference." (For an account of the whole course see University Circulars, No. 139, March, 1899.)

Associate Professor John Martin Vincent has conducted the following courses:

1. Social and Economic History of the Middle Ages, with eighteen graduate students, two hours weekly during the first half-year. The civilization of Europe was traced from the period of the Franks down to the close of the Middle Ages, with two principal objects in view: (1) To exhibit the various forms of organization found necessary in that time; and (2) to show the close connection between the social organization and contemporary economic conditions. A brief syllabus of the course was furnished, and the students were required at the close to expand this from their notes and private reading into a complete digest of the subject.

2. Early Modern History of Europe, with eighteen graduate students, two hours weekly during the second half-year. A plan similar to that of course (1) was followed in the study of the period between the Age of Elizabeth and the Age of Louis XV. The tendencies of civilization
and the progress of social theory were followed until their modern character became distinctly seen.

3. Historical Conference, two hours fortnightly. Twelve graduate students have made cooperative studies of special problems in History in order to gain facility in research. The reports were subjected to the criticism of both students and instructor, with the view of testing the methods of investigation and the interpretation of sources. The topics for this year were chiefly concerned with medieval institutions.

4. European History, with twenty-one undergraduate students, two hours weekly through the year. By the use of text-books, lectures, and student-reports, the history of the chief European nations was followed from the Carolingian period to the present time. Emphasis was laid upon the lines of development which culminate in modern states and institutions.

5. Historical Politics, with twenty-one undergraduate students, two hours weekly through the year. This course was provided for students not members of the historical group, and the object was to obtain just views of political science by tracing the history of government from ancient times to the present day. The latter part of the year was devoted to European history since the Reformation.

Dr. Bernard C. Steiner has conducted a class of thirty-three, including six graduates, in American Constitutional and Political History. The text-books used in connection with lectures were Hinsdale's American Government, McDonald's Select Documents Illustrative of American History, and Stanwood's History of the Presidency. The constitution was carefully studied, and the history of the United States under the constitution was reviewed down to the close of the period of reconstruction. More attention than in previous years was paid to the study of historical sources. Reports on assigned topics were prepared by the students, who were also examined on The Federalist and the first volume of Bryce's American Commonwealth. The class numbered 35 the first half-year and 28 the second half-year. In March and April, 1899, Dr. Steiner gave four lectures on American History to Baltimore teachers in McCoy Hall.

Dr. James Schouler, of Boston, gave, in January and February, 1899, a course of eight lectures on The Industrial History of the United States to a mixed class of University students and Baltimore teachers in the Donovan Room.

Dr. J. C. Ballagh, Associate in History, has conducted the following courses:

1. A collegiate class in Classical and European History, four hours weekly through the year, with sixteen students. The texts used were English translations of Herodotus and Thucydides, with modern authorities.

2. Oral Examinations in General History, one hour weekly through the year, with six graduates. A special effort was made to acquaint students with original sources and the best writers of history.
3. *American Economic History*, one hour weekly through the year, with seven graduate students. Particular attention was paid, in the lectures, to the agricultural development of this country and to the growth of manufactures and commerce.

4. *Southern History*, a weekly conference, with seven graduate students. Special use was made of the University collections of Southern History and Literature. Original lectures and papers on interesting topics were given in this field.

5. *Local and Municipal Government*, a course of lectures, one hour weekly through the year, with six graduates. The lectures were both historical and comparative. Original researches have been instituted in this field.

Dr. Guy Carleton Lee, during the past academic year, has given instruction to undergraduates in the Art of Public Speaking and in the conduct of Class Debates. First-year men were especially trained in vocal culture and declamation; the juniors and seniors, grouped respectively in the so-called "House" and "Senate," were taught to discuss current political and economic questions. The two classes formed the so-called "College Congress," which, March 15, by means of appointed representatives, united in a prize debate on the question of National Expansion. At the same public exhibition some of the best speakers from the class first named were allowed to compete in a prize declamation. In connection with the training in debate, Dr. Lee gave regular class instruction in Parliamentary Law and Practice. These undergraduate courses were attended by 168 students. In the collegiate department, Dr. Lee has also given to 36 students instruction in English Constitutional Law and History, two hours weekly through the year; and he also offered, one hour weekly through the year, a more special and advanced course in English Law, which was followed by 16 students. During the first half-year Dr. Lee gave to graduates some training in extemporaneous speaking and public lecturing. In February and March, 1899, Dr. Lee gave four lectures to Baltimore teachers on the English Beginnings of American Institutions.

Dr. William Cunningham, of Trinity College, Cambridge, gave, in January, 1899, to Baltimore teachers and University students two lectures: (1) English Country Life in the Middle Ages; (2) English Towns in the Middle Ages.

Mr. Albert H. Smyth, Professor of English in the Central High School, Philadelphia, gave, February 3, 1899, a lecture on "The Land of Shakespeare" to a mixed audience of students and teachers.

Dr. S. E. Forman, a graduate of the Historical Department, and now Director of Teachers' Institutes in the State of Maryland, gave, March 10, 1899, a lecture to Baltimore teachers on "Learning to Teach."
Courses of Instruction, 1898–99.

ECONOMICS.

Associate Professor Sherwood has conducted the following courses:

1. Economic Seminary. This organization met weekly in two-hour sessions. Dr. Hollander assisted in the conduct of the work, and the Seminary was attended by ten graduate students. The progress of economic periodical literature was noted and discussed. Special attention was given to the discussion of a series of studies in Commonwealth taxation, prepared, under Dr. Hollander's guidance, by various graduate students. These studies were edited by Dr. Hollander, and will be published as an Extra Volume of the University Studies. The more important papers read and criticised in the Seminary were the following: (1) Chapters in the Financial History of Baltimore, by Dr. J. H. Hollander [selected from his "Financial History of Baltimore," Studies, Extra Volume No. XX]. (2) Comparative Study of Taxation in the Southern States, by T. S. Adams. (3) Study of Taxation in Maryland, by T. S. Adams. (4) The Property Tax in Practice, by L. F. Schmeckebier. (5) The Poll Tax in Practice, by G. E. Barnett. [Numbers (2) to (5) inclusive, were incorporated in the Studies in Commonwealth Taxation mentioned above.] (6) The Corporation Tax in Practice, by H. Campbell. (7) The Economic Views of Thomas Jefferson, by H. Campbell. (8) An Early Discoverer of the Marginal Utility Theory of Value, by T. S. Adams. (9) Index Numbers and the Standard of Value, by T. S. Adams. A special meeting of the Seminary was held to commemorate the life and services of David Ames Wells. The meeting was attended by the teachers and graduate students of the department of history, economics, and politics, and was addressed by President Gilman and Drs. Sherwood and Hollander. Mr. T. S. Adams, Fellow in Economics, read a paper on "The Economic Contributions of David A. Wells," and Mr. L. F. Schmeckebier, Fellow in History, on "The Public Services of David A. Wells." Both of these excellent papers, with a minute of the meeting, were published in the University Circulars, No. 139, March, 1899.

2. Corporations, attended by eighteen graduate students, two hours weekly, first half-year. The corporation was studied as an economic organization through which the individual is enabled to find fuller and less costly satisfaction of his wants than by isolated activity. The economic advantages of private and municipal corporations were analysed. The historical development of the private corporation was traced, and special attention was given to the causes of the phenomenal growth of corporations in this century. The special problems resulting from this growth were also considered.

3. Money, attended by eighteen graduate students, two hours weekly, second half year. Analysis was made of the nature and functions of money, illustrated by historical references. The monetary history and legislation of the United States were outlined with some detail. The monetary
problems of this country, i.e., paper money and the question of silver, were discussed historically and critically. The theory of international bimetallism was likewise treated.

4. **Relation of Economics to Law**, attended by eleven graduate students, one hour weekly through the year. This course was a study in the effects of legal institutions upon economic life and development. The chief legal institutions considered were: Marriage and the Family, Slavery, Property, Industrial Freedom and the State.

Dr. J. H. Hollander, Associate in Economics, conducted the following courses:

1. **Development of Economic Theories since Adam Smith**, with thirteen graduate students, two hours weekly during the first half-year. The main endeavor in this course was to trace the historical development of the fundamental concepts of economic science from Adam Smith to the present time. The current of English thought was followed in the main, but other writers and schools were examined whenever direct influence or analogy was discernible. The method of treatment was topical, resulting in a series of cross-sectional views of the history of economic thought. In connection with the course, members of the class read Adam Smith's Wealth of Nations and John Stuart Mill's Principles of Political Economy.

2. **History and Theory of Economic Crises**, with twelve graduate students, two hours weekly during the second half-year. This course was devoted to a study of the causes and characteristic features of industrial depressions, and to a review of the successive theories advanced by economists in explanation of their origin and periodic recurrence. The natural history of each of the important crises of the nineteenth century was traced in a series of special reports prepared and presented by individual members of the class. At the close of the course an independent theory of crises was formulated and discussed.

3. **Applied Economics**, with twenty-two undergraduate students, two hours weekly through the year. During the first half-year the Development of Economic Life and Thought was studied; International Trade and the Tariff were the subjects during the second half-year.

Dr. Hollander also conducted a co-operative class of ten graduate students during the second term in the study of **Current Congressional History**.

The following undergraduate classes were conducted by Doctors Sherwood and Hollander:

1. **Elements of Economics**. A two-hour course, attended by forty students. The subjects treated were the Elementary Principles of Economics, in the first half-year, and Money and Banking, in the second half.

2. **Advanced Economics**. An elective class, composed of ten undergraduate and six graduate students, met two hours weekly through the year. The text-books used were Wells's Recent Economic Changes and Marshall's Principles of Economics.
POLITICS.

Dr. W. W. Willoughby has conducted the following courses for graduates:

1. The Legal Aspects of Economic and Industrial Problems, with twelve students, two hours weekly during the first half-year. The points of law involved in such matters as factory legislation, and other exercises of the police powers, the regulation of wages, of prices, of monopolies and trusts, and the management of strikes, boycotts, etc., were examined. Not only was the present law given, but its development traced both in the common law and in statutory enactments.

2. United States Constitutional Law, with ten students, two hours weekly through the year. These lectures presupposed knowledge of the principles of our constitutional law, and were devoted to the discussion of the more perplexing and still unsettled points, the illustrations being largely drawn from the decisions of the Supreme Court during the last few years. Carefully prepared written analyses of the leading cases considered were required.

3. History of Modern Political Philosophy, with ten students, two hours weekly during the second half-year. The development of theories of the right of the State to be was traced through the writings of Grotius, Hooker, Hobbes, Spinoza, Locke, Rousseau, Burke, Paine, Kant, Fichte, and Hegel, with running criticism. Private reading was required in the works of most of these authors.

4. Political Conference, two hours fortnightly, with five students, throughout the year. Reviews of important books were submitted, and written papers upon selected topics in political theory were read and discussed.

SOCIAL SCIENCE.

Dr. Jeffrey R. Brackett has conducted a course of twenty lectures on Public Aid, Charity, and Correction. In this connection short conferences were held. The students took part on nearly all the Saturdays between early November and the end of March. The aim was to give a general idea of present social conditions in this country, of the best thought on the above subjects, and to arouse an interest on the part of the students, looking to practical use of the knowledge gained. The topics touched on included causes of poverty, pauperism, and crime; the homeless; the tramp and the non-resident searcher for work; transportation of non-resident poor; the parasites and derelicts of our communities; professional beggars; child-saving; destitute and neglected children; juvenile offenders; relief of the destitute; indoor and outdoor relief; the needy unemployed and relief by work; the Elberfeld system; relief societies; organization of charity; criminals; punishment and reformation; probation.

Several students gave reviews of books, or results of observation of certain conditions in Baltimore. Dr. Arnold gave an account of his
study of "tramp" life, at the Friendly Inn, and Miller Wingert read a paper on town and country life as affecting pauperism. Visits were made, by parties of about a dozen students, to the Friendly Inn, to Bay View Asylum, to the Maryland Penitentiary, and to the lodging houses and other resorts near the Marsh Market. The officials of the various institutions gave much attention in explanation, and for the evening visit to the Marsh Market a very intelligent police officer was provided by the Police Commissioners.

The attendance on the lectures varied from sixteen to six. The class included, during most of the course, four clergymen and a student from St. Mary's Seminary. Special studies have been made by two members of the group: (1) An Investigation for the Friendly Inn; (2) A Report for the Committee of Fifty on the Liquor Problem. Dr. Brackett was recently appointed one of a special committee of seven specialists to direct the summer training class in practical philanthropic work carried on by the New York Charity Organization Society, and he took part in the work of the class for some days in June. He will also attend the conference of "Settlement" workers to be held at Hull House, Chicago, and the National Conference of Charities and Corrections at Cincinnati. It is recommended that class-work in this general field of study be continued, and that both students and city clergymen be encouraged, by academic co-operation and convenient appointments, to pursue this work of expert training, for which there is a growing public demand.

HERBERT B ADAMS,
Professor of American and Institutional History.

Philosophy.

All candidates for the degree of Bachelor of Arts are required to follow courses in Logic, Psychology, Ethics, and the History of Philosophy, during their last year of residence. Five hours a week are assigned to these subjects. The time has been divided between the several subjects as follows: Deductive and Inductive Logic, until December 23; Psychology, January 3 to March 29; Ethics, April 5 to June 1; Outlines of the History of Philosophy, weekly. It is intended to adapt the instruction to the needs of those to whom these studies are new, and, accordingly, the treatment is made as simple and untechnical as possible; at the same time, attention is called to fundamental problems, so that what is done may serve as an introduction to general philosophical study. Informal lectures, discussions in the class, and passages from various authors assigned for reading, are largely relied upon in the presentation; text-books are used, however, in each subject, as affording definite material of acquisition. Each member of the class is required to prepare two essays. During the present year fifty students have been in attendance.
Courses of Instruction, 1898–99.

Jevons's Lessons in Logic was made the basis of instruction in Logic, with references to the works of Mill, Bain, Keynes, and other writers.

In Psychology, Baldwin's Elements of Psychology and Ladd's Outlines of Physiological Psychology were used as text-books, supplemented by many references to the works of other authors. The endeavor was to give a general view of the results of experimental methods of study, and also to emphasize the facts of conscious experience as known through introspection. A series of lectures on the anatomy and physiology of the nervous system was given, as a part of the course, by Dr. L. F. Barker.

The work in Ethics was mainly confined to the theoretical and historical aspects of the subject. Some of the topics treated are the following: The various forms of feeling native to our constitution and constituting the possible motives of conduct; the conditions and nature of the sense of obligation; the authority of conscience; the diversities of moral sentiment; the historic theories of morals—hedonism, utilitarianism, intuitionism, and the application to ethical theory of the doctrine of evolution. Fowler's Principles of Morals, part II, was employed as a text-book, but the instruction was given, to a considerable extent, through lectures.

One hour each week was used, during the first half of the year, for a brief outline of the History of Philosophy, and the survey was brought down, in a summary way, to the modern period. During the latter part of the year a weekly lecture was given for the benefit of those able to attend it as a voluntary exercise.

For several years past it has been customary, toward the end of the year, to invite two or three gentlemen to address the class for the purpose of presenting considerations likely to be serviceable to them in the choice of a vocation. Dr. Walter B. Platt, Clayton C. Hall, Esq., Arthur W. Machen, Esq., and the President of the University, spoke to the class this year. Such counsels are deeply interesting to young men at the critical period of their graduation from college.

A course in the History of Philosophy, for graduate students, was conducted during the year, consisting of the reading and discussion of representative works in modern philosophy, from Descartes to Kant, and including also a few lectures on important systems of post-Kantian philosophy. The works read were: Bacon's Novum Organum, book I and a part of book II; Descartes' Method and Meditations; Spinoza's Ethics; Leibnitz's Monadology; Locke's Essay on Human Understanding, books I, II, IV; Berkeley's Principles of Human Knowledge; Hume's Treatise on Human Nature, book I; a portion of Kant's Critique of Pure Reason. Nine students attended the course; several persons, not members of the University, were received as guests. The class met once a week for discussion and criticism.

Edward H. Griffin,
Professor of the History of Philosophy.
The following report of the work of the undergraduate classes in Drawing, during the year 1898–99, is respectfully submitted:

The course of instruction was, for the first half-year, drawing from simple geometrical forms, beginning with outline and working up to more complicated groups of figures in light and shade. A knowledge of freehand perspective was also included in this early instruction.

In the second half-year the classes were divided: students looking forward to courses in Medicine or Biology continued the work of drawing bones and other natural specimens in order to give them a knowledge of the practical application of drawing in the illustration of lectures in these studies. The practical worth of this work has been commended by several of the instructors in the anatomical department of the Johns Hopkins Hospital.

A class of students was instructed in botanical drawing by Dr. Dreyer, during the latter part of the term.

Students taking the course preparatory to Applied Electricity have for the second half-year followed a course in instrumental or constructive drawing, including work in the application of the principles of descriptive geometry, followed by a course of work in perspective.

S. Edwin Whiteman,
Instructor in Drawing.
## TABULAR STATEMENT OF COURSES OF INSTRUCTION, 1898-99.

<table>
<thead>
<tr>
<th>Instructor</th>
<th>COURSES</th>
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<tbody>
<tr>
<td>Craig</td>
<td>Advanced Theory of Functions.</td>
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<td>Craig</td>
<td>Mathematical Conference.</td>
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<td>Craig</td>
<td>Theory of Surfaces.</td>
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<td>Craig</td>
<td>General Theory of Differential Equations.</td>
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<tr>
<td>Cohen</td>
<td>Theory of Functions: Elementary Course.</td>
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<tr>
<td>Cohen</td>
<td>Elliptic Functions.</td>
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<td>Cohen</td>
<td>Theoretical Mechanics.</td>
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<tr>
<td>Cohen</td>
<td>Theory of Substitutions.</td>
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<tr>
<td>Hulburt</td>
<td>Determinants; Calculus.</td>
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<td>Hulburt</td>
<td>Theory of Equations; Analytic Geometry: Adv.</td>
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<td>Hulburt</td>
<td>Analytic Geometry: Minor Course.</td>
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<td>Hulburt</td>
<td>Differential and Integral Calculus.</td>
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<td>Cohen</td>
<td>Elementary Solid Geometry.</td>
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<td>Cohen</td>
<td>Trigonometry; Analytic Geometry: Elem.</td>
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<tr>
<td>Poor</td>
<td>Theoretical Astronomy.</td>
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<td>Poor</td>
<td>Spherical and Practical Astronomy.</td>
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<td>Descriptive Astronomy.</td>
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<tr>
<td>Dorsey</td>
<td>Observatory Work.</td>
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## PHYSICS.

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<tr>
<th>Instructor</th>
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<tr>
<td>Rowland</td>
<td>Electricity and Magnetism.</td>
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<td>Rowland</td>
<td>Journal Meeting.</td>
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<tr>
<td>Ames</td>
<td>Physical Seminary.</td>
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<td>Ames</td>
<td>Spectrum Analysis.</td>
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<td>Ames</td>
<td>Application of Dynamics to Chemistry.</td>
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<td>Ames</td>
<td>General Physics: Major Course.</td>
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<td>General Physics: Minor Course.</td>
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<td>Hutchinson</td>
<td>Applied Electricity: First Year's Course.</td>
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<td>Hutchinson</td>
<td>Applied Electricity: Second Year's Course.</td>
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<td>Hering</td>
<td>Electrical Seminary.</td>
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<td>Electrical Measurements.</td>
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<td>Central Station Equipment.</td>
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<td>Geer</td>
<td>Steam and Hydraulic Engineering.</td>
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<td>Mechanics of Engineering.</td>
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<td>Whitehead</td>
<td>Alternating Current Machinery.</td>
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<td>Rowland</td>
<td>Laboratory Work.</td>
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<td>Ames</td>
<td>Hutchinson</td>
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<td>Hering</td>
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<td>Bliss</td>
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<td>Waidner</td>
<td>Whitehead</td>
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<td>Waidner</td>
<td>Experimental Physics for Medical Students.</td>
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# Tabular Statement of Courses.

<table>
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<tr>
<th>Instructor</th>
<th>Courses</th>
<th>No. of Hours per week</th>
<th>No. of Students in half-year</th>
<th>No. of Students in 2d half-year</th>
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<td>Gilpin</td>
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<td>Morse</td>
<td>Laboratorv Work.</td>
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<tr>
<td>Renouf</td>
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<td>Gilpin</td>
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<tr>
<td>Jones, H.C.</td>
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</table>

## Chemistry.

- Historical Chemistry.
- Journal Meeting.
- Inorganic Chemistry: Major Course.
- General Chemistry: Minor Course.
- Physical Chemistry.
- Laboratory Work.

## Geology and Mineralology.

- General Geology.
- Palaeontology.
- Palaeontology: Laboratory Work.
- Experimental Geology.
- Geological Physics.
- Exploratory Surveying.
- Petrography.
- Petrography: Laboratory Work.
- Journal Club.
- Structural Geology.
- Climatology.

## Biology.

- Zoology: Advanced Course.
- Zoological Journal Club.
- Zoology: Major Course.
- Zoology: Elective Course.
- Physiological Journal Club.
- Physiological Seminary.
- Animal Physiology.
- Osteology.
- General Biology.
- Physiology and Histology: Major Course.
- Systematic Botany: (During April and May.)
- Botany: Advanced.
- Laboratory Work.

<table>
<thead>
<tr>
<th>Instructor</th>
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<th>No. of Hours per week</th>
<th>No. of Students in half-year</th>
<th>No. of Students in 2d half-year</th>
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<td>Gildersleeve.</td>
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<td>Lucian; Letter of James.</td>
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**GERMAN.**

*Advanced Work.*

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*Supplementary Courses.*

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**ROMANCE LANGUAGES.**

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### ENGLISH.

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### HISTORY, POLITICS, AND ECONOMICS.

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<td>Hollander, Hollander</td>
<td>History and Theory of Crises.</td>
<td>2</td>
<td>7</td>
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<tr>
<td>Willoughby, Willoughby</td>
<td>Economic and Industrial Problems.</td>
<td>2</td>
<td>12</td>
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<td>Willoughby, Willoughby</td>
<td>Political Conference. (Alternate weeks.)</td>
<td>2</td>
<td>8</td>
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<tr>
<td>Steiner, Lee, Lee</td>
<td>American Political and Constitutional History.</td>
<td>2</td>
<td>35</td>
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<tr>
<td>Schouler, Schouler</td>
<td>History of English Law.</td>
<td>2</td>
<td>29</td>
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<tr>
<td>Brackett, Callahan, Latane</td>
<td>U. S. Constitutional Law.</td>
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<td>15</td>
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<td>Philosphy.</td>
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<td>Griffin, Griffin, Griffin</td>
<td>History of Philosophy.</td>
<td>1</td>
<td>11</td>
<td>9</td>
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<td>Griffin, Griffin, Griffin</td>
<td>Logic. (Until December 23.)</td>
<td>5</td>
<td>50</td>
<td>48</td>
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<td>Griffin, Griffin, Griffin</td>
<td>Psychology. (January 3 to March 29.)</td>
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<td>Drawing.</td>
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<td>Whiteman, Geer.</td>
<td>Freehand, Constructive, and Perspective Drawing.</td>
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<td>Mechanical Drawing.</td>
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<td>Forensics and Elocution.</td>
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<td>Lee, Lee, Lee, Lee</td>
<td>Debate and Parliamentary Practice.</td>
<td>1</td>
<td>45</td>
<td>44</td>
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<td>Lee, Lee, Lee, Lee</td>
<td>Conference in Parliamentary Practice.</td>
<td>1</td>
<td>18</td>
<td>11</td>
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<td>Lee, Lee, Lee, Lee</td>
<td>Debate and Parliamentary Law.</td>
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<td>Lee, Lee, Lee, Lee</td>
<td>Conference in Parliamentary Law.</td>
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<td>19</td>
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<td>Lee, Lee, Lee, Lee</td>
<td>Forensics.</td>
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<td>66</td>
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<tr>
<td>Lee, Lee, Lee, Lee</td>
<td>Public Lecturing and Extemporaneous Speaking.</td>
<td>1</td>
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DEGREES CONFERRED, 1899.

Doctors of Philosophy.


Degrees Conferred, 1899.


Degrees Conferred, 1899.


Frederick Albert Saunders, of Ottawa, Canada, A.B., University of Toronto, 1895. **Subjects:** Physics, Mathematics, and Astronomy. **Dissertation:** A Bolometric Study of the Spectrum of an Absolutely Black Body between the Temperatures of 100° and 578° Centigrade. **Referees on dissertation:** Professors Rowland and Ames.

Laurence Frederick Schmeckebier, of Baltimore, A.B., Johns Hopkins University, 1896. **Subjects:** History, Economics, and Politics. **Dissertation:** History of the Know-Nothing Party in Maryland. **Referees on dissertation:** Professor Adams and Dr. Steiner.

St. George Leakin Sioussat, of Lake Roland, Md., A.B., Johns Hopkins University, 1896. **Subjects:** History, Politics, and Economics. **Dissertation:** History of Highway Legislation in Maryland, and its Influence on the Economic Development of the State. **Referees on dissertation:** Professors Adams and Reid, and Dr. Mathews.


Mervin Tubman Sudler, of Westover, Md., S.B., Maryland Agricultural College, 1894. **Subjects:** Zoology, Physiology, and Botany. **Dissertation:** The Development of Penilia schmackeri, Richard. **Referees on dissertation:** Professors Brooks and Andrews.

Morris Crater Sutphen, of Morristown, N.J., A.B., Princeton University, 1890. **Subjects:** Latin, Greek, and Sanskrit. **Dissertation:** A Study of the Diction and Phraseology of Lucius Annaeus Seneca, with special reference to the *Sermo Cotidianus*. **Referees on dissertation:** Professors Warren and Smith.

William Taylor Thom, of Ashton, Md., A.B., Washington and Lee University, 1890. **Subjects:** History, Politics, and Economics. **Dissertation:** The Struggle for Religious Freedom in Virginia: The Baptists. **Referees on dissertation:** Professor Adams and Dr. Ballagh.

Harold John Turner, of Baltimore, A.B., Johns Hopkins University, 1892. **Subjects:** Chemistry, Geology, and Physics. **Dissertation:** Reaction of Sulphourea with Benzene- and Toluene-sulphonchlorides. **Referees on dissertation:** Professors Remsen and Morse.

Campbell Easter Waters, of Baltimore, A.B., Johns Hopkins University, 1895. **Subjects:** Chemistry, Mineralogy, and Botany. **Dissertation:** A Study of the Products formed by the Action of Heat on Parasulphaminemetatoluic Acid. **Referees on dissertation:** Professors Remsen and Morse.

Henry Skinner West, of Baltimore, A.B., Johns Hopkins University, 1893. **Subjects:** English, History, and History of Philosophy. **Dissertation:** The Verification of "King Horn," with other studies contributory to the History of Middle English Metrics. **Referees on dissertation:** Professors Bright and Browne.


Doctors of Medicine.

Edward Erle Brownell, of Woodland, Cal., Ph. B., Yale University, 1895.
Humphrey Warren Buckler, of Baltimore, A. B., Johns Hopkins University, 1895.
Rufus Ivory Cole, of Peru, Ill., S. B., University of Michigan, 1896.
John Staige Davis, of Baltimore, Ph. B., Yale University, 1895.
Charles Phillips Emerson, of Methuen, Mass., A. B., Amherst College, 1895.
Blanch Nettleton Epler, of Oakland, Cal., S. B., University of California, 1895.
Joseph Erlanger, of San Francisco, Cal., S. B., University of California, 1895.
Philip Saffery Evans, Jr., of Baltimore, A. B., Yale University, 1895.
Richard Holden Follis, Jr., of San Francisco, Cal., Ph. B., Yale University, 1895.
Frank Taylor Fulton, of Warsaw, Ill., S. B., Knox College, 1894, A. B., Johns Hopkins University, 1895.
James Daton Gallagher, of Steubenville, Ohio, A. B., Johns Hopkins University, 1895.
Henry Joseph Hoye, of Providence, R. I., A. B., Brown University, 1895.
Louis Williams Ladd, of New Haven, Conn., A. B., Yale University, 1895.
Charles Sumner Little, of Evansville, Ind., A. B., Wabash College, 1894.
John Arthur Luetscher, of Sauk City, Wis., S. B., University of Wisconsin, 1895.
Frank Allemong Lupton, of Auburn, Ala., S. B., Alabama Polytechnic Institute, 1891.
Frank Worthington Lynch, of Cleveland, Ohio, A. B., Adelbert College, 1895.
Chester Lea Magee, of San Diego, Cal., A. B., Leland Stanford Jr. University, 1895.
Hugh Miller Moore, of Oxford, Ohio, S. B., Miami University, 1895.
Degrees Conferred, 1899.

Charles Williams Ottley, of Atlanta, Ga., A.B., Princeton University, 1893.
Paul Octavius Owsley, of Chicago, Ill., Ph. B., Yale University, 1895.
Jacob Hall Pleasant, Jr., of Baltimore, A.B., Johns Hopkins University, 1895.
Sylvan Rosenheim, of Baltimore, A.B., Johns Hopkins University, 1895.
John Albertson Sampson, of Troy, N. Y., A.B., Williams College, 1895.
Halbert Severin Steensland, of Madison, Wis., S.B., University of Wisconsin, 1895.
William Ridgely Stone, of Washington, D. C., A.B., Princeton University, 1895.
Edgar Randolph Strobel, of Baltimore, A.B., Johns Hopkins University, 1895.
Frederick Herman Verhoeff, of Louisville, Ky., Ph. B., Yale University, 1895.
William Whitridge Williams, of Baltimore, A.B., Johns Hopkins University, 1895.
Sarah Delia Wyckoff, of Dayton, Ohio, S.B., Wellesley College, 1894.
John Lawrence Yates, of Milwaukee, Wis., Ph. B., Yale University, 1894, S.B., University of Wisconsin, 1895.

Bachelors of Arts.

James Robert Charlton Armstrong, of Baltimore.  
George Diuguid Davidson, of Baltimore.  
Henry Carter Downes, of Maryland.  
Ferdinand Colquhoun Fisher, of Baltimore.  
Walter Melvin Fooks, of Baltimore.  
Eddy Burke Fosnocht, of Baltimore.  
Simon Walter Frank, of Baltimore.  
John Calvin French, of Baltimore.  
Charles Carter Gaddess, of Baltimore.  
John Reed Gemmill, of Pennsylvania.  
Harry Seliger Greenbaum, of Baltimore.  
Robert Harold Grimes, of Baltimore.  
Clarence Maurice Guggenheimer, of Baltimore.  
Hugh Sisson Hanna, of Baltimore.  
Stephen Paul Harwood, of Baltimore.  
Louis Wardlaw Haskell, Jr., of Georgia.  
Talbot Dickson Jones, of Maryland.  
Leon Lewis Joyner, of Baltimore.  
Karl Junghuth, Jr., of Kentucky.  
John Albert Kalb, of Maryland.  
John Hendrick King, of Baltimore.  
George Wroth Knapp, Jr., of Baltimore.  
Walter Marshall Krager, of Baltimore.  
Herman Kurrelmeyer, of Baltimore.  
Joshua Levering, Jr., of Baltimore.
Degrees Conferred, 1899.

James Morfit Mullen, of Baltimore.
Philip Austen Murkland, of Baltimore.
Edward Livingston Palmer, Jr., of Baltimore.
John Howard Palmer, of Baltimore.
Charles Mallory Remsen, of Baltimore.
Lawrence Anton Reymann, of West Virginia.
Edward Ayrault Robinson, Jr., of Baltimore.

George Canby Robinson, of Baltimore.
William Leavell Ross, of West Virginia.
Edwin Albert Spilman, of Baltimore.
René de M. Taveau, of Baltimore.
Richard Henry Thomas, of Baltimore.
Ottomar Siegmund Werber, of Baltimore.

Proficients in Applied Electricity.

James Robert Charlton Armstrong, of Baltimore.

Reinier Koller Beeuwkes, of Baltimore.
William Trout Everett, of Baltimore.
James William Swaine, of Baltimore.
REPORT ON THE OFFICIAL STATE BUREAUS CONNECTED WITH THE JOHNS HOPKINS UNIVERSITY.

To the President of the Johns Hopkins University:

I have the honor to submit for your information the following reports concerning the investigations carried on by the Maryland Geological Survey and the Maryland Weather Service during the past academic year. This work is so closely identified with that of the Geological Department that the results properly constitute a part of the investigations of the University.

The Maryland Geological Survey.

The Maryland Geological Survey has now been in operation for somewhat over three years, having been established by an act of the General Assembly of 1896. Operations were commenced immediately upon the official organization of the Survey on March 25 of that year, when the Commission elected Professor Clark as State Geologist. The original appropriation of $10,000 annually provided by the General Assembly of 1896 was increased by the passage of two additional acts in 1898, a Division of Topography, with an appropriation of $5,000 annually, and a Highway Division, with an appropriation of $10,000 annually, being added to the original provision, making the combined resources of the Survey at the present time $25,000 annually.

The work of the Survey during the past year has embraced a wide field of investigation, in which geology, topography, physiography, terrestrial magnetism, agriculture, forestry, and highway engineering have formed conspicuous parts.

The geological work, which is directly under the charge of the State Geologist, is divided into three divisions, Dr. E. B. Mathews, the Assistant State Geologist, being Chief of the Division of the Piedmont Plateau, Professor Charles S. Prosser, of the Division of the Appalachian Region, and Dr. G. B. Shattuck, of the Division of the Coastal Plain. In each of these fields much advance was made during the past year. A large area was mapped in Allegany and Garrett counties by members of the...
The Maryland Geological Survey.

Survey, and further investigations were conducted on the Devonian and Carboniferous formations by Professor Prosser and his assistants, Messrs. R. B. Rowe and A. P. Romine. Dr. Shattuck and his assistants made much progress in the mapping of the geological formations of southern and eastern Maryland. Much time was devoted to a study of the stratigraphy and paleontology of the Miocene in St. Mary's and Calvert counties, with the assistance of Messrs. L. C. Glenn and G. C. Martin. Further attention was also given by Dr. Shattuck to the marls and later gravels about the head of the Chesapeake Bay, with the assistance of Mr. F. B. Wright. Mr. A. Bibbins continued during the year his study of the Potomac formations, especially in Cecil county.

The topographic work of the Survey was maintained during the year, as in the past, in cooperation with the U. S. Geological Survey, topographic parties being kept in the field in Allegany and Garrett counties as well as in portions of Cecil, Kent, and Harford. The two former counties are now completely mapped, and the atlas sheets will shortly be ready for distribution.

Much of the energy of the Survey has been devoted the past year and a half to a study of the highway needs of the State, this work being for the most part in charge of Dr. H. F. Reid, Chief of the Division of Highways. Dr. Reid has had associated with him in this work Mr. A. N. Johnson, as highway expert. An important report has been prepared during the year by the members of the Survey, and constitutes Volume III of the Geological Survey series. It deals with the various aspects of highway construction, both from a geological and economic standpoint. This volume is now published and ready for distribution. It opens with a comprehensive statement by the State Geologist regarding the establishment and conduct of the Highway Division, and is followed by a chapter by the same author regarding the relation of Maryland climate, topography, and geology to highway construction. Following these opening chapters is an article upon the history of highway legislation by Dr. St. G. L. Sioussat. Then follow two chapters by Mr. Johnson on highway conditions in Maryland and on highway engineering. The volume closes with two extended chapters by Dr. Reid on the testing of road-materials and the economic importance of good roads. A complete digest of the highway legislation enacted by the General Assembly of Maryland forms an appendix to the volume.

The magnetic work, under the charge of Dr. L. A. Bauer, who has recently been made Chief of the Division of Terrestrial Magnetism in the U. S. Coast and Geodetic Survey, was continued in the western portion of the State, a number of additional stations being also established in the central and eastern counties. Dr. Bauer completed during the year his reports upon the boundary surveys with which the Maryland Geological Survey has been officially connected: first, the Western Boundary of the State, which was surveyed under Dr. Bauer's direction.
The Maryland Geological Survey.

in 1897; and second, the boundary line between Allegany and Garrett counties, which was completed under authority of the General Assembly in 1898. Both of these lines were difficult to run and required the most exact engineering methods. Both lines had also been many years in dispute. Local surveyors had been unable to accurately run the line separating the two counties, although the position of the line was prescribed in an act of the General Assembly in 1872, and several attempts had been made to establish it. The results of Dr. Bauer's work upon the Western Boundary will be used shortly by the Attorney-General of the State in the case now before the Supreme Court of the United States, relating to the location of the boundary between Maryland and West Virginia.

The agricultural soils of the State have been studied during the past year under a plan of cooperation with Professor Milton Whitney, Chief of the Division of Soils of the U. S. Department of Agriculture. In this work the Survey is also associated with the Maryland Agricultural Experiment Station, so that the several interests of the State are closely cooperating. Detailed soil maps have been already prepared for Allegany, Garrett, and Cecil counties by Mr. C. W. Dorsey, who had the assistance of Mr. J. A. Bonsteel in his later work. This investigation of the soils will be pushed forward as rapidly as the underlying geology is studied and platted.

A study of the hydrography of the State has also been taken up in cooperation with the Division of Hydrography of the U. S. Geological Survey, through Mr. F. H. Newell, the Chief of the Division. This work is carried on jointly by the Maryland Geological Survey and the Maryland Weather Service, and already many gauges have been established and records secured from the leading streams of the State.

The forestry conditions of the State, which are recognized to depend in no small degree upon the physiographic and geologic features, have been taken up for study by the Survey in cooperation with the Forestry Divisions of the U. S. Geological Survey and the U. S. Department of Agriculture, through their chiefs, Messrs. Henry Gannett and Gifford Pinchot. Already a complete forestry survey has been completed in Allegany county as the result of this cooperation.

The distribution of plant and animal life in Maryland is so closely related to the physiography, geology, and soils, that the Survey has in contemplation a thorough study of the fauna and flora of the State. These investigations will be under the direction of Dr. C. Hart Merriam, Chief of the Biological Survey of the U. S. Department of Agriculture, who will study the question largely from the standpoint of the distribution of life-zones. Allegany and Garrett counties have been studied in this way. Independent work bearing upon this problem has already been done by Messrs. Basil Sollers and B. W. Barton, both of whom have a wide knowledge of the systematic botany of the State. Their investigations have been carried on in the western counties, as well as upon the Eastern Shore.
It is planned to conduct these investigations in cooperation with the State Horticultural Bureau, and upon their completion publish a series of joint systematic reports.

Physiographic studies have been carried on during the past year by Dr. Cleveland Abbe, Jr., in Allegany and Garrett counties, and the results of his work will appear in connection with the county reports, which are already in process of preparation.

A special investigation of much importance has been conducted during the past season by Mr. Bailey Willis, of the U. S. Geological Survey, upon the physical history of the Appalachian Region. This valuable contribution by Mr. Willis will appear in Volume IV of the Geological Survey reports.

The constant demand for the publications of the Survey has practically exhausted the editions of Volume I and Volume II, so that the Survey is no longer distributing these reports. Volume III, relating to highways, is now printed, and the report will be distributed in December, prior to the next session of the General Assembly. Volume IV, which will be devoted chiefly to Western Maryland, has been largely prepared, and is only waiting for a more opportune season to be put into type. It will probably be printed during the spring of 1900.

**THE MARYLAND WEATHER SERVICE.**

The Maryland Weather Service has been in operation for the last eight years, having been established in May, 1891, under the joint auspices of the Johns Hopkins University, the Maryland Agricultural College, and the U. S. Weather Bureau. It became an official organization by an act of the General Assembly, which was approved by the Governor on April 6, 1892. Under the authority granted by this act the State Service became permanently established at the Johns Hopkins University, under the direction of a Board of Control nominated by the heads of the institutions above mentioned and commissioned by the Governor. The appropriations for the maintenance of this bureau are $2,000 annually, the fund being used for publications and such apparatus as is necessary for the special investigations to which the Service is now devoting its attentions.

The investigations of the Maryland Weather Service are broad in their scope, and include not only meteorology in its narrower sense, but also physiography, medical climatology, agricultural soils, hydrography, forestry, and distribution of the life-zones of the State. Much work was carried on in several of these lines during the past year, either independently or in association with the Maryland Geological Survey. The cooperation granted by the U. S. Department of Agriculture, through the chiefs of its various bureaus and divisions, has been of special significance. The cordial support which has been given to the work, especially by Professor Willis L. Moore, Chief of the U. S. Weather Bureau, and Hon. Charles D. Walcott,
Director of the U. S. Geological Survey, has rendered it possible to add much to our knowledge of Maryland climatological conditions. At the same time the cordial relations existing between the Weather Service and the State agricultural institutions has produced valuable results in many lines, and already plans are formed for much more extensive cooperation.

The most significant work of the year has been the preparation and publication of the first volume of the new series of reports. It is the first of several volumes which it is the purpose of the Service to present on the climatological conditions of Maryland. The report opens with a chapter by the Director on the methods of work pursued by the Service. The main part of the volume is given up, however, to detailed discussions of the physiography and the meteorology of the State. The paper on physiography is by Dr. Cleveland Abbe, Jr., and most of the work was done under the auspices of the Geological Survey and the University.

The meteorological report was prepared by Professor Cleveland Abbe, Dr. O. L. Fassig, and Mr. F. J. Walz, members of the U. S. Weather Bureau, the two latter detailed to Baltimore in connection with the Maryland work. Mr. Walz is the chief of the Baltimore office and the meteorologist of the State Weather Service. Professor Abbe and Dr. Fassig are both connected with the staff of the University.

The Maryland Weather Service has also been engaged in other lines of research preparatory to the publication of further reports. This work relates especially to the agricultural soils, the hydrography, the forestry, and the distribution of the life-zones in the State, and already considerable progress has been made in these directions.

WM. BULLOCK CLARK,
State Geologist and Director.
ABSTRACT OF THE REPORT OF THE LIBRARIAN.

The number of bound volumes in the Library is 91,082. The accessions during the year have amounted to 5128. Of these accessions 2613 were received by gift or exchange.

The number of pamphlets and unbound volumes received during the year exceeded 5000. The total number of pamphlets in the Library is estimated at 100,000.

The number of serials annually subscribed to is three hundred. Over one thousand serials are also regularly received in exchange.

The principal gifts of the year were:

From Mr. Ernst Schmeisser, of Baltimore, the sum of five hundred dollars, to be expended in the purchase of books in German Literature. With this sum a large number of volumes have been purchased under the advice of Professor Wood. These make a most important and much-needed addition to the resources of our German department; and include very many noteworthy works especially collected by Professor Wood in Germany.

From Professor Howard A. Kelly, two hundred and fifty-seven volumes. These include early editions of the Bible and of classical authors, and many works in English literature and theology. The collection is especially remarkable for bibliographical rarities and early printed works.

From Professor Herbert B. Adams, one hundred and fifty volumes, chiefly the works of Southern authors. These, with other books of the same character, form the beginning of a special collection of Southern literature.

From Mr. William W. Spence, of Baltimore, sixty volumes of a series of works in general science, by Darwin, Huxley, Tyndall, Spencer, and others; and the continuation of the set of the Jesuit Relations.

From Mr. Leopold Strouse, of Baltimore, forty-seven bound volumes and fifty-two pamphlets for the Leopold Strouse Rabbinical Library.

From Professor Cleveland Abbe, of Washington, a large number of books and pamphlets for the Abbe Meteorological Library.

From the Due de Loubat, of Paris, reproductions of the Mexican Codex of Bologna and of the Telleriano-Remensis Manuscript, together with other works illustrative of the early American languages.

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Report of the Librarian.

The following gifts also are worthy of special mention:
From Dr. Ames, 260 volumes, chiefly government publications.
From President Gilman, 140 volumes relating to various subjects, and many pamphlets.
From Professor Gildersleeve, nine additional volumes of the Corpus Scriptorum Ecclesiasticorum Latinorum.
From Henry Holt & Co., their publications for the year.
From the Authors' Club (New York), the Liber Scriptorum.
From Princeton University, the Memorial Volume commemorating its sesqui-centennial.
From M. R. Bischofsheim, of Paris, a complete set of the Annals of the Nice Observatory.
From Earl Cowper, the Cartulary of the Monastery at Colchester.
From the University of Glasgow, the initial volume of the Catalogue of Greek Coins in the Hunterian Collection; also, the Roll of University Graduates, 1727-1897.
Noteworthy gifts have likewise been received from the following donors:
Professor Alexander Agassiz, Dr. E. A. Andrews, D. L. Bartlett, the Bishop Museum (Honolulu), Bodleian Library, Gilbert Cope, the Misses Eaton, G. W. Egleston, Professor T. Egleston, Dr. S. A. Green, India Geological Survey, International Geodetic Bureau (Potsdam), International Railway Commission, Museum of La Plata, Long Island Historical Society, National Civil Service Reform League, the Peabody Institute, the Pennsylvania-German Society, Potsdam Astrophysical Observatory, Dr. A. H. Powell, Mme Edgar Quinet, Professor Remsen, Dr. K. F. Smith, and Rev. C. L. Woodworth.
The usual installments of academic exchanges have been received.
During the year, the new library of the Medical School has been organized, and the collection in scientific medicine has been placed in the rooms provided in the Physiological Laboratory. A library committee, consisting of Professors Mall (as chairman), Osler, Hurd, Howell, and the Librarian, has been named by the Medical Faculty.
The books of the McCoy collection, which had been kept at the late residence of Mr. McCoy, have been recently removed to McCoy Hall. A large portion of these have been arranged in cases especially provided around the corridor on the fourth floor, where a new and attractive annex to the library has been provided.
The general library has been in charge of Mr. Brandow, with two assistants.
The classical library has been in charge of Dr. C. W. E. Miller, under the supervision of Professor Gildersleeve.
The modern language collection has been in charge of Dr. Keidel and a library attendant, under the supervision of Professor Wood.
The historical collection has been in charge of Miss Daran, under the direction of Professor Adams and Dr. Vincent.
The chemical library has been in charge of Dr. Gilpin, under the direction of Professor Remsen.
The biological library has been under the direction of Professor Brooks and Dr. Andrews, with a library attendant.
The geological library has been in charge of Dr. Mathews, under the supervision of Professor Clark.
The astronomical library has been in charge of Dr. Poor.
The physical and mathematical seminary collection has been under the supervision of Dr. Ames.
The medical collections have been in charge of Miss Blogg, under the special direction of Professors Hurd and Mall.
During the year the New Book Department has purchased 3900 volumes of the estimated value of $6800. Since the opening of the department 98,000 volumes of the estimated value of about $155,000 have been exhibited on its shelves.

N. Murray.
Librarian.

1899, October 1.
ABSTRACT OF THE REPORT OF THE JOHNS HOPKINS PRESS.

The several regular journals have been continued during the year as follows:

The sixteenth series of the Studies in Historical and Political Science has been completed and the seventeenth is in progress. The current numbers have been generally devoted to Maryland history. Among the issues have been papers on Sir Robert Eden of Maryland, State Banking in Maryland, The Know-Nothing Party in Maryland, Early Colonies in Maryland, etc. Other papers have dealt with the history of Virginia and the Carolinas. "Extra Volumes" on the Financial History of Baltimore, by Dr. Hollander, and on Cuba and International Relations, by Dr. Callahan, have also been published.

Of the American Journal of Mathematics, volume twenty-one, including 396 quarto pages, has been published. An index to volumes xi-xx has also been issued. The series of portraits of distinguished mathematicians was continued with the portrait of Professor Newcomb. This journal is now edited by Professor Simon Newcomb, with the co-operation of other mathematicians.

Of the American Chemical Journal, volumes twenty and twenty-one have been completed, and four numbers of volume twenty-two have appeared. In consequence of the large amount of material sent in for publication, the size and the number of issues of this journal have been increased. It now appears monthly. Two volumes of six numbers and of about 500 pages each will be issued yearly.

Of the American Journal of Philology, three numbers of volume nineteen and two numbers of volume twenty have appeared. These contain 606 pages, octavo.

Volume three of the Journal of Experimental Medicine (696 pages and 75 illustrations) has been completed, and four numbers of volume four (478 pages and 22 plates) have appeared.

The third part of volume four of Memoirs from the Biological Laboratory (40 pages and 5 plates, quarto) has been issued. This contains Dr. Drew's monograph on Yoldia Limatula.

Of the Modern Languages Notes, volume thirteen has been completed and six numbers of volume fourteen have appeared.
Of the Contributions to Assyriology, part one of volume four, containing 154 pages, has been issued.

Numbers 137 to 141 of the University Circulars, including 92 pages, quarto, have appeared during the year.

The twenty-third Annual Report of the President was issued in December, 1898, and the Annual Register of the University and the Special Announcement of the Medical School in May, 1899.

Of the Johns Hopkins Hospital Reports, appearing irregularly, six numbers of volume seven (350 pages, octavo), and two numbers of volume eight (160 pages, octavo) have been issued.

Of the Johns Hopkins Hospital Bulletins, five numbers, completing volume nine, and eight numbers of volume ten (280 pages, quarto, with numerous illustrations) have appeared.

The reproduction of a unique manuscript of the Kashmirian Atharva-Veda has been in progress under the direction of Professor Bloomfield. It is expected that the work will soon be ready for the subscribers.

Of the Hebrew Text of the Polychrome Bible, edited by Professor Haupt, the volume containing Isaiah (208 pages, octavo) has recently been published.

There have been received, in accordance with the regulations, one hundred and fifty copies of the theses accepted for the degree of Doctor of Philosophy by the graduates named below:

Becker, E. J.—A Contribution to the Comparative Study of the Medieval Visions of Heaven and Hell, with Special Reference to the Middle-English Versions.
Brush, M. P.—The Isopo Laurenziano.
Bryan, A. C.—History of State Banking in Maryland.

Chamberlain, J. S.—A Further Study of Two of the Products of the Transformation of Parasulphaminebenzoic Acid when Heated to 220°.
Clutz, F. H.—A Determination of the Orbit of Planetoid (115) Thyras.
Cook, C. G.—Some Double Halides of Tin with the Aliphatic Amines and the Tetramethylammonium.

Crane, F. H. D.—A Contribution to the Knowledge of Tellurium.
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Fay, E. W.—The Rig-Veda Mantras in the Grhya Sutras.
Fraps, G. S.—The Composition of a Wood Oil.
Green, D. I.—Value and Its Measurement.
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James, B. B.—The Labadist Colony in Maryland.

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Kingsbury, S. S.—A Rhetorical Study of the Style of Andocides.

Lefèvre, G.—Budding in Perophora.

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Nakaseko, R.—Some Transformations of Metasulphaminebenzoic Acid under the influence of Heat.

Reid, E. E.—The Hydrolysis of Acid Amides.

Schmeckebier, L. F.—History of the Know-Nothing Party in Maryland.


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Waidner, C. W.—A Comparison of Rowland’s Mercury Thermometers, etc.

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Furness, W. H. (3d), M. D. (Author.) Folk-lore in Borneo. Wallingford, 1899. O.

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MCGILL UNIVERSITY. Papers from the Departments of Botany, Engineering, Geology and Physics. Montreal, 1888. O.


MEYER, DR. A. (Author.) Statistics of Five Hundred Cases of Lobar Pneumonia, etc. New York, 1899. O.

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Gates, W. B. The Musical Interests of Children. 1898. Q.
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MOORE, PROF. E. S. (Author.) Were Middle America peopled from Asia? New York, 1898. O.
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NEVADA, SURVEYOR-GENERAL. Biennial Reports of the Surveyor-General and State Land Register, 1897-98. Carson City, 1899. O.
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PARIS, BIBLIOTHEQUE DE LA FACULTE DE DROIT. One hundred and eighty-nine academic publications.
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Jahresbericht des K. Geodätschen Institute 1891-98. 5 Parts. Berlin, 1892-98. O. And three other publications.

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PRESTON, E. D. (Author.) Recent Progress in Geodesy. Washington, 1899. O.


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PRINCE, PROF. J. D. (Author.) A Critical Commentary on the Book of Daniel. Leipzig, 1899. O.

PRINCETON UNIVERSITY. Memorial Book of the Princeton Sesquicentennial, 1746-1896. New York, 1898. F.

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SOUTHERN RAILWAY COMPANY. Presbrey, F. The Empire of the South. 1898. Q.


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Draper, J. W. History of the Conflict between Religion and Science. New York, 1898. O.

Le Conte, J. Evolution, Its Nature, etc. New York, 1898. O.

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Ferré, E. Criminal Sociology. New York, 1898. O.

[60 volumes in all of the series of writings of naturalists and philosophers published by Appletons, New York.]

20 volumes of the series of the Jesuit Relations and Allied Documents, in continuation of previous gifts.

STEINKE, DR. R. C. Ten miscellaneous pamphlets.

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STOKVIS, PROF. B. J. The Physiological Action of Methylaltramine. 1899. Q.

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SWEDISH ACADEMY OF SCIENCES. Handlingar, New series, v. 29-30. 2 vols. F.

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TEXT-BOOK ASSOCIATION OF PHILADELPHIA. Sharpless, I. A Quaker Experiment in Government. Phila., 1898. O.

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**Vos, Dr. B. J.** Hartmann, M. Norellen. 3 vols. Hamburg, 1883. D.

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Gifts to the Library.

College; Massachusetts Board of Education; Massachusetts Board of Gas and Electric Light Commissioners; Massachusetts Board of Railroad Commissioners; Massachusetts Institute of Technology; Massachusetts Record Commissioners; Massachusetts School for the Feeble-Minded; Massachusetts State Board of Charities; Massachusetts State Board of Health; Melbourne, University of; Metropolitan Museum of Art (New York); Metropolitan Water Board (Boston); Michigan Bureau of Labor Statistics; Milwaukee Board of City Service Commissioners; Milwaukee Public Museum; Minnesota Historical Society; Missouri Botanical Garden; Missouri Geological Survey; Nebraska Bureau of Labor and Industrial Statistics; Newark Free Public Library; Newton Free Library; New Bedford Free Public Library; New Hampshire State Library; New Jersey Bureau of Statistics; New York City Board of Education; New York City Charity Organization Society; New York City Comptroller; New York Civil Service Reform Association; New York Infirmary for Women and Children; New York Mercantile Library; New York Meteorological Observatory; New York Society of Mechanics and Tradesmen; New York Society for the Relief of the Ruptured and Crippled; New York State Board of Mediation and Arbitration; New York State Bureau of Labor Statistics; New York State Charities Aid Association; New York State Commission in Lunacy; New York State Weather Bureau; New York Young Men's Christian Association; Northwestern University; Nova Scotia Superintendent of Education; Oberlin College Library; Ohio Board of State Charities; Ohio State Board of Arbitration; Ohio State University; Owens College; Panjab University; Perkins Institution; Philadelphia Mercantile Library Company; Philadelphia National Export Exposition; Pratt Institute Free Library; Providence Athenaeum; Providence Public Library; Queen's College (Galway); Rhode Island Commission of Public Schools; Rochester, University of; St. Andrews University; St. Louis Merchants' Exchange; St. Mary's Industrial School for Boys; St. Paul Public Library; Salem Public Library; San Francisco Board of Supervisors; San Francisco Mechanics Institute; Saxon Academy; Scotland General Board of Lunacy; Society for the History of the Germans in Maryland; Stavanger Museum; Storrs Agricultural Experiment Station; Syracuse Central Library; Tennessee, University of; Union of American Hebrew Congregations; University Settlement Society; Utica State Hospital; Wagner Electric Manufacturing Company; Western Reserve University; Williams College Library; Wisconsin Bureau of Labor Statistics; Wisconsin Forestry Commission; Wisconsin State Treasurer; Yearly Meeting of Friends; Yorkshire College.

The University is indebted, as in previous years, for many and valuable gifts from he several governmental departments in Washington.
ON THE PREVALENT DISEASES IN THE PHILIPPINES.

A REPORT TO THE COMMITTEE OF THE JOHNS HOPKINS MEDICAL SCHOOL

BY

PROFESSOR S. FLEXNER, M.D.

AND

PROFESSOR L. F. BARKER, M.D.

1899
REPORT UPON AN EXPEDITION SENT BY THE
JOHNS HOPKINS UNIVERSITY TO INVESTI-
GATE THE PREVALENT DISEASES
IN THE PHILIPPINES.

TO PRESIDENT GILMAN, DOCTORS WELCH AND OSLER,
Philippine Committee of the Johns Hopkins University Medical School.

Gentlemen:—We have the honor to submit to you a brief account of our work and movements in carrying out your commission to study the prevalent diseases in the Philippine Archipelago. Your commissioners, consisting of Dr. Simon Flexner and Dr. L. F. Barker, to whom were voluntarily attached Messrs. J. M. Flint and F. P. Gay, of the Medical School, the latter having given their time and paid all their own expenses, sailed from Vancouver on March 29th, 1899, and arrived in Manila May 4th, where they immediately established themselves for the purpose of the work mentioned. Owing to the military situation it was found impracticable to visit other ports in the Archipelago or to penetrate into the interior of the Island of Luzon. The entire time, therefore, of the commission was spent in the study of disease existing among the natives and American troops in Manila and at Cavite.

WORK IN JAPAN AND HONG-KONG.

As transport sailings were uncertain and the passage out by them slow, it was decided to save time and go by fast steamer, the Canadian Pacific Railway giving especial rates to the commission on tickets around the world.

The original plan of your commissioners was to proceed directly to Manila by way of Hong-Kong, at which latter port it was intended to stop only long enough to outfit for the tropics and to catch the earliest steamer sailing for Manila. After consideration of the probability that certain new kinds or phases of disease, not occurring in temperate regions, might be encountered in the Archipelago, and of the fact that the diseases of the Philippines would probably have much in common with those of Japan, it was decided to spend one week in Japan, where modern hospitals could be
visited and advantage taken of the results of the study of tropical disease by highly trained and eminent Japanese physicians. The decision proved to be valuable in many ways; and we especially desire to express our obligations to Professors Aoyama, Mitsukuri, Miura and Kitasato, who showed us many courtesies. The opportunity to see in the Japanese hospitals pure and mixed examples of beri-beri assisted us greatly in our subsequent studies, as did also the observations on dysentery made in the Institute for Infectious Diseases at Tokio.

While outfitting at Hong-Kong we improved the opportunity to study the bubonic plague, which was still prevailing at that port. This study was made easy by the generosity and courtesy of the English Civil Physician, Dr. James Lowson, in charge of the Plague Hospital and Mortuary. The study began in this way was extended when two months later we returned to Hong-Kong, en route to America. At this time a considerable exacerbation of the disease had taken place, and within a week or ten days we saw several scores of cases and performed many autopsies. The several forms of infection: inguinal; axillary; tonsillar and cervical and pulmonary, were thus encountered. Bacteriological examinations were made and tissues collected for future study. Two of the party (Dr. Barker and Mr. Flint) spent on the return journey three weeks (at their own expense) in India, where the great epidemics of plague there raging were observed.

ARRIVAL IN MANILA.

Immediately upon our arrival in Manila quarters were sought at the "Hotel de Oriente." Very insufficient accommodations were secured for a limited time, as the sudden accession of families of Army and Naval officers had strained the hotel to its fullest capacity. Having been forewarned of the conditions of living in Manila, we took the precaution to bring with us from Hong-Kong a group of Chinese servants, intending to set up housekeeping if practicable. After much difficulty a small house was secured in San Miguel, where, by hiring parts of the furnishings and buying what could not be rented, a temporary establishment was secured.

Within a few hours after our arrival the credentials and private letters brought were presented to Colonel Woodhull, Surgeon-in-Chief to the 8th Army Corps and to General Otis. Colonel Woodhull afforded us every opportunity to prosecute our work in the military hospitals. Although no special introduction was in our possession, we quickly met Dr. Bournes, chief health officer of Manila, who opened to us the hospitals under his charge. Somewhat later we met Dr. Pearson, Chief Naval Surgeon, who opened the Naval Hospital at Cavite to us.

HOSPITALS IN MANILA.

Civil Hospitals. These consist of a large hospital within the walled city, San Juan de Dios. It has a capacity of from 250 to 300 beds and accommodated during our stay both natives and Europeans. The number of Euro-
On the Prevalent Diseases in the Philippines. 109

pean patients was small. When the military hospitals were much crowded a certain number of wounded prisoners of war were accommodated. The hospital contained chiefly native medical cases of both sexes. The San Lazaro or leper hospital, in the outskirts of Manila, contained from 80 to 100 lepers during our stay. These had come from Luzon, almost exclusively from Manila and its immediate surroundings. The two sexes are provided for in separate, large and airy wards. One wing of the building, having a private entrance, is devoted to native prostitutes who apply regularly for examination and are incarcerated here and treated medically when found to be suffering from venereal disease.

Military Hospitals. These consisted, beside the regimental hospitals which were virtually detention camps, of three Reserve Hospitals—the 1st, 2nd and 3rd Reserve Hospitals; a convalescent hospital on Corregidor Island and the Hospital Ship Relief, which was anchored in the bay. The First Reserve Hospital, under the control of Major Crosby, had been originally the Spanish military hospital. It had been from time to time, by the erection of tents over platforms raised a foot or two from the ground, increased in capacity until in July it contained 1200 or more beds. The Second Reserve Hospital, under the control of Major Keefer, was a transformed modern school building and because of its limited capacity (250 beds), high ceilings and wide corridors it made a model hospital. The Third Reserve Hospital had just been established towards the end of our visit and was smaller than the others and intended as a convalescent hospital. The hospital at Corregidor is a temporary structure and intended for convalescents. It is especially well adapted for its purpose because of the high and hilly character of the island and its complete investment by the sea. The Relief was used as a hospital for acute cases; but some time before we left the acute cases were transferred to the Reserve Hospitals and the Relief sailed for San Francisco with invalided men.

The Reserve Hospitals accommodated especially American sick and wounded; but a ward in the First Reserve Hospital was set aside for the Filipino wounded.

After the outbreak of beri-beri at Cavite a hospital under military control was established at San Roque in the remains of the Spanish Marine Hospital which had been wrecked by the insurgents.

Naval Hospital. A small hospital for sick seamen and marines was established at Cavite. Through the courtesy of Dr. Pearson this was open to us for clinical studies.

Clinical, Pathological and Bacteriological Laboratory. Through the kindness of Colonel Woodhull and Major Crosby, the officer-in-chief of the First Reserve Hospital, a small Filipino house, situated on the banks of the Pasig, was given us in which to establish a laboratory. This was done on the second floor of the house. The expense of putting up working-tables was kindly borne by the Medical Corps of the Army. The laboratory equipment was set up in this building and within a very few days after
our arrival work was begun. We desire to speak of the co-operation of the Medical Staff of the hospital who afforded us every opportunity to visit the wards and many of whom joined or assisted us in clinical and pathological work. We wish especially to acknowledge the co-operation and assistance of Lieut. Richard P. Strong, a graduate of the J. H. U. Medical School, who had on our arrival already begun to do laboratory work and who gave up much of his valuable time in furthering our interests. It was found unnecessary to establish laboratories in the other hospitals, in the first place because all were connected with the First Reserve by the Signal Service telegraphic system of which we had free use; and next because all the dead were carried to the morgue in conjunction with the First Reserve Hospital. We went or were frequently called to the other hospitals to make clinical and bacteriological examinations.

With few exceptions, all the dead were subject to autopsy. Postmortem examinations were made at the Civil Hospitals upon natives and at the Military Hospital upon all that died. Exceptions were made only in the cases of those dead from gunshot wounds, when, if pressed for time, necropsies were sometimes omitted.

PREVAILING DISEASES.

The subject of the prevalent diseases may be considered as they affect (1) the natives, and (2) Europeans and Americans, especially the American garrison.

Diseases affecting Natives. (a) Skin Diseases. Of the skin diseases prevailing among the natives, aside from small-pox and other specific exanthemata, may be mentioned (1) diseases of the scalp, which are very frequent; (2) dhobie itch; and (3) an affection which resembles closely and which is probably identical with Aleppo boil (Delhi boil, Biskra button, epidemiische Beulenkrankheit). (b) Small-Pox. This disease has been so generally prevalent in Luzon that the natives have to a large extent lost fear of it. All evidence points to the greatest carelessness in preventing its spread during Spanish times. Isolation of the sick and disinfection of the habitations seem not to have been attempted, and vaccination, even among the Spanish garrison, had not been carried out. Under these circumstances it could be no surprise that after the American occupation the disease should appear and even become epidemic. The epidemic which appeared early last year was promptly met by Dr. Bournes, who caused the Spanish garrison still in Manila and the natives and Chinese within the city to be vaccinated. In order to insure satisfactory results he found it necessary to establish a vaccine farm in which young carabao were used for the preparation of the virus. Under the influence of this measure and by the aid of isolation of the sick the disease had in May practically disappeared within the military lines about Manila. (c) Leprosy. A definite focus of this disease exists in Luzon. The cases, in the neighbor-
hood of 100, which were confined in the San Lazaro Hospital came from Manila and the country immediately surrounding that city. The disease affected both sexes, being more frequent in adults, although also present in half-grown boys and girls. The commonest forms were the tubercular and mutilating. Autopsies were performed upon several cases that had died during our stay. (d) Tuberculosis. Accurate statistics of the extent of the prevalence of this disease are difficult if not impossible to obtain. That the disease is a common one is indicated by several facts. It is frequently met with in the native hospitals, where it may have been recognized during life or is disclosed at autopsy. Many cases of supposed beri-beri which we autopsied at San Juan de Dios proved to be tuberculosis. It is possible that the two diseases had co-existed, for we found such combinations freely recognized by Japanese physicians in the hospitals in Japan. Tuberculosis of the lungs was also found as a common complication in leprous individuals that came to autopsy. A not very infrequent spectacle met with on the streets are much emaciated and weak natives, affected with suggestive coughs and free expectoration. While it is not certain that these individuals were examples of tuberculosis, there is strong probability that this explanation of their condition is the correct one. (e) Venereal Disease. Syphilis, by general agreement (statistics not available), does not prevail unduly. Chancroids and gonorrhoea are, on the other hand, very common. The majority of the prostitutes confined in the San Lazaro were victims of these two diseases. A very common complication of the soft sore, owing to lack of cleanliness, is swelling and suppuration of the inguinal glands. (f) Beri-Beri. This disease is well known among the natives. It would appear to be epidemic and endemic in Luzon. It is, judging from cases met with in San Juan de Dios Hospital and the statements of native physicians, constantly appearing in a sporadic form. During our stay an epidemic appeared among the Filipino prisoners confined at Cavite. Some 200 cases developed in a few weeks; the mortality ranged from 20 to 30 per cent. The several recognized forms of the disease—œdematous, paralytic, and mixed—were encountered. Clinical and bacteriological studies were made upon the living, and the dead were subjected to autopsy and bacteriological examination. The difficulty of getting to and fro between Manila and Cavite on account of the impossibility of land communication, made this part of our work difficult and time-consuming. A considerable collection of pathological material and other data has been made. This material is now in process of study and arrangement.

Diseases affecting Americans. The chief causes of disability among the American land forces are the enteric diseases. These are diarrhea, dysentery, typhoid fever, and gastro-intestinal catarrh. Many of the diarrheas are merely preliminary to the symptoms of dysentery. Other infectious fevers are relatively infrequent. A small number of cases of scarlet fever and diphtheria only were encountered. The malarial fevers prevailed but
not seriously during the months of May, June, and July. (a) Dysentery. This disease is responsible for the greatest amount of invalidation and the highest mortality. It appears in acute, sub-acute, and chronic forms. The chronic form is sometimes attended by secondary abscess of the liver. The acute form may end in 24, 48, or 72 hours. In it the whole of the large intestine and usually the lower portion of the ileum is involved. The mucous membrane of the gut is swollen, congested and oedematous, in places haemorrhages have taken place into the mucous membrane and the sub-mucosa is swollen and its blood-vessels greatly dilated. No ulcers existed in such cases. Amoebae were absent or very difficult to find in the fresh stools and in the intestinal contents immediately after death. In the sub-acute and chronic forms ulcers are present in the mucosa; the coats of the intestine are greatly thickened; at times large sloughs of mucous membrane, partly detached, occur, and the lesions are confined to the large intestine. Amoebae are more commonly present in these cases but are variable as to actual occurrence and numbers. Large hepatic abscesses, usually single, were encountered in a number of these cases. Amoebae were variable in the contents of the abscesses. In one very large abscess, occupying both right and left lobes of the liver, no amoebae but a pure culture of the Staphylococcus pyogenes citreus was obtained. The clinical study of the cases of dysentery with reference to amoebae was equally unsatisfactory. In cases with marked symptoms both in patients confined to bed and those beginning to go about but still with persistent loose bowels, these organisms were frequently missed; while in instances ready to be discharged they might, at certain examinations, be found to be very abundant. In morphology, the amoebae studied corresponded with the amoeba coli found in Egypt and in this country. The bacteriological study of cases of dysentery was carried out upon the fresh stools of acute and chronic cases and with the intestinal contents, mesenteric glands, liver, etc., of cases dying and submitted to autopsy. The intestinal flora was studied in its entirety by means of plate cultures. A variety of microorganisms were separated. Many of these were well-known species or occurred normally in the situations in which found. Tests with blood sera for agglutination were made and those organisms giving positive reactions were separated for further study. Two groups of bacilli were thus differentiated: (1) Having affinities with the group of bacillus coli communis. The agglutination was variable, being constant and sensitive with the blood-serum of the same individual (host) and inconstant, and active in relatively strong solutions only, in serum from other individuals. (2) Having affinities with the group of bacilli of which the Bacillus typhosus is the type. Agglutination constant and sensitive with blood-serum of host as well as the sera of other individuals suffering from dysentery. Inactive with normal serum, serum from cases of typhoid fever, malaria and beri-beri. A bacillus belonging to the second group, which is still under study, would seem to agree with the bacillus dysenteriae isolated by Shiga from
cases of endemic dysentery occurring in Japan. It is regarded by us as an important factor in the causation of the dysentery of the Philippine Islands. Experiments in immunization of animals and the production of vaccine are in progress. (b) Typhoid Fever. The total number of cases of typhoid fever in the hospitals during May, June and July was far below those of dysentery; the number of deaths also was less. It was, however, a frequent affection among Americans. The examination of the blood, microscopically and with the Widal test, was of the greatest help in diagnosis. The disease came to autopsy presenting the classical intestinal lesions and also in atypical forms. In the small number of autopsies made upon those dead of this disease, several instances of slight intestinal involvement or even entire escape were met with. These cases would have remained very obscure or even undetermined except for the Widal reaction and bacteriological examination. In some instances the typhoid bacillus was found widely disseminated throughout the body, the autopsy being made immediately after death. (c) Malarial Fevers. A large proportion of the cases sent in from the field and outlying military stations where examinations had to be hastily made as instances of “malaria” or “intermittent fever” turned out to be cases of other diseases (typhoid fever, dysentery, etc.). A number of true cases of malarial fever were, however, met with, and in the blood of these the characteristic parasites, identical with those occurring in other places in which studies of the blood have been made, were found. No quartan parasites were met with, but cases of quartan affection doubtless exist. Typical infections with the “tertian” and “aestivo autumnal” varieties of the parasite were encountered by us, and by microscopists among the Army physicians in the Reserve Hospitals and on the Relief. One of the fatal cases of malaria was complicated with acute lobar pneumonia. The cases of “calentura perniciosa” which occur in Mindoro, Mindanao and in certain parts of Luzon should be studied as soon as these regions are accessible. The Archipelago is favorable also for the study of the relation of mosquitoes and other insects to malarial infection. Some of the malarial cases were undoubtedly recidives, imported from Cuba or elsewhere. A very small number of deaths was referable to malaria. Two instances of acute malarial infection came to us for autopsy. On the other hand, several instances of malarial pigmentations of the organs, in persons dying from other diseases, were encountered. Parasites in the latter cases were absent. These men had, as a rule, been in Cuba or Porto Rico during the Spanish war.

(d) Tuberculosis. A number of cases of pulmonary tuberculosis developed among the soldiers in the American troops. A definite history of exposure to wet and various hardships was elicitable in many of these cases.

(e) Dengue. At Cavite there occurred a large outbreak of an epidemic fever of short duration (a few days) known locally as Cavite fever. Almost all who remained in Cavite for any length of time were attacked. Second
and third attacks were common. Muscular pains were severe in some cases and not in others. A slight exanthem was present in many of the cases. Flushing of the face, restlessness and general malaise accompanied the fever and rapid heart action. Malarial parasites were not present in the blood, nor did the serum from such cases agglutinate cultures of the typhoid bacillus. The epidemic is regarded as one of Dengue.

(f) Tropical Ulcers. A number of the American soldiers suffered from a form of indolent ulceration, locally known as "tropical ulcer." These ulcers occurred singly sometimes but were more often multiple. They began as small pustules, which gradually extended. They were most frequent among those who had been compelled to make long marches through swampy districts, and the patients themselves attributed the ulceration to "poisoning" in the marshes.

(g) Wound Infection. Our experience with wound infections was rather limited. The other problems undertaken, regarded as more important as bearing on the general question of disease and its causation in the Islands, left but little time and opportunity to attack this interesting subject. Certain observations of interest were made. Tyrogenic infections due to the common pus cocci occurred. In a small number of gun-shot wounds causing compound fractures emphysematous gangrene occurred and the bacillus aerogenes capsulatus was isolated. In one instance of compound fracture of the tibia a spore-bearing bacillus was associated with the bacillus aerogenes capsulatus. It was found in cover-slip preparations from the original wound and in the first set of cultures. It could not be further transplanted and hence was not identified. In two other cases was the bacillus aerogenes met with, one a case of peritonitis following infection of the intestine from an incarcerated hernia, and the other also a case of peritonitis but secondary to perforation of a typhoid ulcer of the intestine. The army surgeons were enthusiastic as to the adequacy of the "First-Aid Package" in limiting the number of wound infections.

CLIMATOLOGICAL AND HYGIENIC CONDITIONS.

The climate is that of continual summer. There is a wet season (S. W. Monsoon) and a dry season (N. E. Monsoon). The hottest period is at the end of the dry and the beginning of the wet season—precisely the period of our visit. The climate from November to March is said to be delightful. In the worst season of the year the climate is very trying and especial precautions are to be taken if Americans are to keep well there. The extremes of temperature are not great, but the constancy of the high temperature, together with a high degree of humidity, make the climate peculiarly enervating. We were interviewed at length while in Manila, officially by the U. S. Philippine Commission, with regard to climate and the hygienic precautions to be observed, as well as with regard to other medical problems in the islands. The climatic conditions and the hygienic precautions to be taken will form the subject of a fuller report to be made later.
On the Prevalent Diseases in the Philippines.

The above represents, briefly stated, the results achieved by your expedition sent to the Philippines. As will be patent to you, not a little yet remains to be done before the scientific portion of the work is completed. This portion of the report is for the present only hinted at or withheld until it shall have been finished. It is the intention of your commissioners to make careful studies of the material relating to beri-beri, dysentery, malarial and typhoid fevers, leprosy, and the bubonic plague, which has been collected. These studies, with the exception of that relating to dysentery, will be carried out upon preserved material, and the labor involved, which has been divided between Baltimore and Philadelphia, will necessitate that some time must elapse before the finished report is forthcoming. The task of completing the study of the bacillus isolated from cases of dysentery has been assigned to Dr. Flexner, who was principally engaged with that theme during the residence in Manila. In order to carry out the experiments as designed, an outlay for experimental animals and their maintenance will need to be made. It is known to you that the original sum so generously contributed by friends of the University and appropriated for the use of your commission has been exhausted, and that private means have been drawn upon to defray a part of the expense involved. We would respectfully draw attention to this fact and to the further expenses to be incurred, and request direction as to your wishes regarding these matters.

We wish to express our deep gratitude to Messrs. Flint and Gay, whose untiring efforts during our residence in Manila made it possible to accomplish far more than we could have done unaided. It is a pleasure to acknowledge also many kindnesses on the part of Mr. John W. Garrett.

That we are deeply indebted to the officers in the Medical Service of the U.S. Army and Navy for opportunities and aid is evident from the report preceding. Courtesies and kindnesses extended by various citizens of Manila, European and native, are here also gratefully acknowledged.

Very respectfully,

Simon Flexner,

Lewellys F. Barker.
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1900-1901.

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*Elected November 5, 1900, in place of Charles Morton Stewart, who died August 13, 1900.
REPORT.

TO THE TRUSTEES OF THE JOHNS HOPKINS UNIVERSITY:—

Gentlemen:

The close of the year brought to the University a great sorrow. Mr. Charles Morton Stewart, President of the Board of Trustees, died suddenly at Old Point Comfort, Va., August 13, 1900, in his seventy-second year. He had held the position of a Trustee since 1878, and in 1891 he was made President of the Board, succeeding Judge Dobbin, who, in his turn, had succeeded Mr. Galloway Cheston.

Mr. Stewart was a devoted friend of this institution, rarely absent from the meetings of the Board, always interested in the public ceremonies, and most attentive to every special duty that was laid upon him. He was generous in his gifts, most hospitable in his courtesies, ever ready to commend the University to the confidence of parents and to the support of those who could give financial aid. In times of anxiety and perplexity he never lost his hope and courage. He could tolerate nothing which would detract from the good name of the University, and by his words, his spirit, and his example, he held up the highest standards and the highest expectations. The collegiate work especially appealed to him, and for the encouragement of essay-writing he
Death of Mr. Stewart.

repeatedly gave a liberal prize. Five of his sons were here graduated as Bachelors of Arts.

As a merchant,—of a type which is disappearing in the changes of modern commerce,—his business extended to remote countries, and brought him into relations, in person or by correspondence, with leading financial firms in this country and abroad. In the importation of coffee from South American ports, he was of late years largely concerned, and he owned a fleet of several swift sailing vessels which plied between Rio Janeiro and Baltimore.

Mr. Stewart was fond of music, literature, and art. He was interested in public affairs, especially in those that pertained to the welfare of his native city. To the church of which he was a member he was loyally devoted, and his faith bore constant fruit in his life and works. As a friend, a neighbor, an associate, and a colleague, he will be remembered with affection, admiration, and gratitude.

The resolutions adopted by his associates in the Board of Trustees are as follows:—

During the summer vacation, when his colleagues were absent from home and widely separated, they heard, with great sorrow, that Mr. Charles Morton Stewart, President of the Board of Trustees of the Johns Hopkins University, had died suddenly on the 13th of August, at Old Point Comfort, Virginia, where he had gone for rest and recreation.

The Board now desires, at the first meeting after the vacation, to record its sense of the loss which the University has suffered in the death of Mr. Stewart, and the personal sorrow of every one of its members.

Throughout the twenty-one years of service as trustee—during nine of which he was president of the Board—he was profoundly interested in the University, and never allowed himself to doubt as to the continuance of the success of its great work.

The kindliness of his nature and his easy and unaffected courtesy charmed all who enjoyed the privilege of his acquaintance, and caused him to be beloved by everyone connected with the University.
Statistics.

In all the varied relations and associations of his long and active life he was useful and honored; and, without exaggeration, it may be said of him that few men have so well, and from so many, deserved grateful and affectionate remembrance.

In this University his memory will be long cherished.

Statistics.

The academic staff numbered during the year one hundred and thirty-one teachers, including forty-seven professors and instructors in the Johns Hopkins Medical School. The number of students enrolled was six hundred and forty-five, of whom two hundred and sixty-two were residents of Maryland, three hundred and sixty-four came here from thirty-nine other States of the Union, and nineteen from foreign countries. Among the students were four hundred and sixty-nine already graduated, one hundred and eighty-five of whom were enrolled in the department of Philosophy and the Arts, two hundred and eighty-four in the Medical Department. They came from one hundred and fifty-three colleges and universities. There were one hundred and fifty-nine matriculates (or candidates for the degree of Bachelor of Arts), and seventeen were admitted as special students, to pursue courses of study for which they seemed fitted, without reference to graduation. The degree of Bachelor of Arts was conferred upon forty-seven candidates, the degree of Doctor of Medicine upon forty-four, and thirty-five were promoted to the degree of Doctor of Philosophy.

The following statistics have been prepared, as in former years, by the Registrar, Mr. T. R. Ball. The first table indicates the enrolment of students in each year since the University was opened in the autumn of 1876:
### Statistics.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Enrolled</th>
<th>Graduates, (incl. Fellows)</th>
<th>Matriculates</th>
<th>Non-Matriculates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876-77</td>
<td>89</td>
<td>54</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>1877-78</td>
<td>104</td>
<td>58</td>
<td>24</td>
<td>22</td>
</tr>
<tr>
<td>1878-79</td>
<td>123</td>
<td>63</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>1879-80</td>
<td>159</td>
<td>79</td>
<td>32</td>
<td>48</td>
</tr>
<tr>
<td>1880-81</td>
<td>176</td>
<td>102</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>1881-82</td>
<td>175</td>
<td>99</td>
<td>45</td>
<td>31</td>
</tr>
<tr>
<td>1882-83</td>
<td>204</td>
<td>125</td>
<td>49</td>
<td>30</td>
</tr>
<tr>
<td>1883-84</td>
<td>249</td>
<td>159</td>
<td>53</td>
<td>37</td>
</tr>
<tr>
<td>1884-85</td>
<td>290</td>
<td>174</td>
<td>69</td>
<td>47</td>
</tr>
<tr>
<td>1885-86</td>
<td>314</td>
<td>184</td>
<td>96</td>
<td>34</td>
</tr>
<tr>
<td>1886-87</td>
<td>378</td>
<td>223</td>
<td>108</td>
<td>42</td>
</tr>
<tr>
<td>1887-88</td>
<td>420</td>
<td>231</td>
<td>127</td>
<td>62</td>
</tr>
<tr>
<td>1888-89</td>
<td>394</td>
<td>216</td>
<td>129</td>
<td>49</td>
</tr>
<tr>
<td>1889-90</td>
<td>404</td>
<td>229</td>
<td>130</td>
<td>45</td>
</tr>
<tr>
<td>1890-91</td>
<td>468</td>
<td>276</td>
<td>141</td>
<td>51</td>
</tr>
<tr>
<td>1891-92</td>
<td>547</td>
<td>337</td>
<td>140</td>
<td>70</td>
</tr>
<tr>
<td>1892-93</td>
<td>551</td>
<td>347</td>
<td>133</td>
<td>71</td>
</tr>
<tr>
<td>1893-94</td>
<td>522</td>
<td>344</td>
<td>123</td>
<td>55</td>
</tr>
<tr>
<td>1894-95</td>
<td>559</td>
<td>412</td>
<td>126</td>
<td>51</td>
</tr>
<tr>
<td>1895-96</td>
<td>596</td>
<td>406</td>
<td>149</td>
<td>41</td>
</tr>
<tr>
<td>1896-97</td>
<td>520</td>
<td>344</td>
<td>144</td>
<td>32</td>
</tr>
<tr>
<td>1897-98</td>
<td>641</td>
<td>456</td>
<td>152</td>
<td>33</td>
</tr>
<tr>
<td>1898-99</td>
<td>649</td>
<td>462</td>
<td>163</td>
<td>24</td>
</tr>
<tr>
<td>1899-1900</td>
<td>645</td>
<td>469</td>
<td>159</td>
<td>17</td>
</tr>
</tbody>
</table>

During twenty-four years, three thousand eight hundred and forty-four individuals have been enrolled as students, of whom fifteen hundred and thirty-four are registered as from Maryland (including twelve hundred and thirty-three from Baltimore), and two thousand three hundred and ten from sixty-eight other States and countries. Two thousand four hundred and seventeen persons entered as graduate students, and fourteen hundred and twenty-seven entered as under-
Statistics.

graduates. Of the undergraduates, three hundred and sixty-seven have continued as graduate students, many of them proceeding to the degree of Doctor of Philosophy. It thus appears that two thousand seven hundred and eighty-four persons have followed graduate studies here.

The following table indicates the geographical distribution of the students each year since the opening, as shown by the Annual Registers:

<table>
<thead>
<tr>
<th>Year</th>
<th>Of Maryland</th>
<th>Not of Md.</th>
<th>Of Maryland</th>
<th>Not of Md.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876-77</td>
<td>59</td>
<td>30</td>
<td>1888-89</td>
<td>183</td>
</tr>
<tr>
<td>1877-78</td>
<td>71</td>
<td>33</td>
<td>1889-90</td>
<td>215</td>
</tr>
<tr>
<td>1878-79</td>
<td>76</td>
<td>47</td>
<td>1890-91</td>
<td>235</td>
</tr>
<tr>
<td>1879-80</td>
<td>97</td>
<td>62</td>
<td>1891-92</td>
<td>273</td>
</tr>
<tr>
<td>1880-81</td>
<td>95</td>
<td>81</td>
<td>1892-93</td>
<td>266</td>
</tr>
<tr>
<td>1881-82</td>
<td>97</td>
<td>78</td>
<td>1893-94</td>
<td>260</td>
</tr>
<tr>
<td>1882-83</td>
<td>106</td>
<td>98</td>
<td>1894-95</td>
<td>260</td>
</tr>
<tr>
<td>1883-84</td>
<td>123</td>
<td>126</td>
<td>1895-96</td>
<td>272</td>
</tr>
<tr>
<td>1884-85</td>
<td>130</td>
<td>160</td>
<td>1896-97</td>
<td>254</td>
</tr>
<tr>
<td>1885-86</td>
<td>130</td>
<td>184</td>
<td>1897-98</td>
<td>279</td>
</tr>
<tr>
<td>1886-87</td>
<td>162</td>
<td>216</td>
<td>1898-99</td>
<td>277</td>
</tr>
<tr>
<td>1887-88</td>
<td>199</td>
<td>221</td>
<td>1899-1900</td>
<td>262</td>
</tr>
</tbody>
</table>

The attendance upon the courses given in some of the principal subjects has been as follows during the last five years:

<table>
<thead>
<tr>
<th>Subject</th>
<th>1895-96</th>
<th>1896-97</th>
<th>1897-98</th>
<th>1898-99</th>
<th>1899-1900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics and Astronomy</td>
<td>126</td>
<td>78</td>
<td>85</td>
<td>79</td>
<td>60</td>
</tr>
<tr>
<td>Physics</td>
<td>132</td>
<td>115</td>
<td>101</td>
<td>94</td>
<td>91</td>
</tr>
<tr>
<td>Chemistry</td>
<td>123</td>
<td>117</td>
<td>139</td>
<td>118</td>
<td>116</td>
</tr>
<tr>
<td>Geology and Mineralogy</td>
<td>37</td>
<td>26</td>
<td>39</td>
<td>34</td>
<td>31</td>
</tr>
<tr>
<td>Biology</td>
<td>92</td>
<td>141</td>
<td>156</td>
<td>173</td>
<td>154</td>
</tr>
<tr>
<td>Pathology and Bacteriology</td>
<td>49</td>
<td>38</td>
<td>39</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Greek</td>
<td>56</td>
<td>42</td>
<td>45</td>
<td>47</td>
<td>38</td>
</tr>
<tr>
<td>Latin</td>
<td>84</td>
<td>76</td>
<td>73</td>
<td>71</td>
<td>67</td>
</tr>
<tr>
<td>Sanskrit, etc.</td>
<td>46</td>
<td>34</td>
<td>40</td>
<td>33</td>
<td>38</td>
</tr>
<tr>
<td>Semitic Languages</td>
<td>18</td>
<td>23</td>
<td>35</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>German</td>
<td>167</td>
<td>139</td>
<td>170</td>
<td>125</td>
<td>121</td>
</tr>
<tr>
<td>French, Italian, etc.,</td>
<td>92</td>
<td>109</td>
<td>79</td>
<td>87</td>
<td>90</td>
</tr>
<tr>
<td>English, etc.</td>
<td>148</td>
<td>122</td>
<td>132</td>
<td>142</td>
<td>160</td>
</tr>
<tr>
<td>History and Political Science</td>
<td>104</td>
<td>116</td>
<td>129</td>
<td>123</td>
<td>121</td>
</tr>
<tr>
<td>Philosophy</td>
<td>49</td>
<td>44</td>
<td>61</td>
<td>61</td>
<td>58</td>
</tr>
</tbody>
</table>
Statistics.

Since degrees were first conferred, in 1878, six hundred and sixty-six persons have attained the Baccalaureate degree, five hundred and forty-nine have been advanced to the degree of Doctor of Philosophy, and one hundred and thirteen to the degree of Doctor of Medicine, as appears from the following table,—the whole number of individuals graduated being twelve hundred and four:

<table>
<thead>
<tr>
<th></th>
<th>B. A.</th>
<th>Ph. D.</th>
<th>B. A.</th>
<th>Ph. D.</th>
<th>M. D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877-78</td>
<td>0</td>
<td>4</td>
<td>1889-90</td>
<td>37</td>
<td>33</td>
</tr>
<tr>
<td>1878-79</td>
<td>3</td>
<td>6</td>
<td>1890-91</td>
<td>50</td>
<td>28</td>
</tr>
<tr>
<td>1879-80</td>
<td>16</td>
<td>5</td>
<td>1891-92</td>
<td>41</td>
<td>37</td>
</tr>
<tr>
<td>1880-81</td>
<td>12</td>
<td>9</td>
<td>1892-93</td>
<td>40</td>
<td>28</td>
</tr>
<tr>
<td>1881-82</td>
<td>15</td>
<td>9</td>
<td>1893-94</td>
<td>41</td>
<td>33</td>
</tr>
<tr>
<td>1882-83</td>
<td>10</td>
<td>6</td>
<td>1894-95</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>1883-84</td>
<td>23</td>
<td>15</td>
<td>1895-96</td>
<td>37</td>
<td>36</td>
</tr>
<tr>
<td>1884-85</td>
<td>9</td>
<td>13</td>
<td>1896-97</td>
<td>36</td>
<td>42</td>
</tr>
<tr>
<td>1885-86</td>
<td>31</td>
<td>17</td>
<td>1897-98</td>
<td>46</td>
<td>36</td>
</tr>
<tr>
<td>1886-87</td>
<td>24</td>
<td>20</td>
<td>1898-99</td>
<td>41</td>
<td>42</td>
</tr>
<tr>
<td>1887-88</td>
<td>34</td>
<td>27</td>
<td>1899-1900</td>
<td>47</td>
<td>35</td>
</tr>
<tr>
<td>1888-89</td>
<td>36</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

666   549   113

Certificates of proficiency in applied electricity were awarded to ninety persons from 1889 to 1899.

The following table indicates the enrolment of students in the Medical School since its opening in October, 1893:

| Candidates for Doctors of Total |
| Degree of M. D. Medicine | Enrolment |
|--------------------------|-----------|-----------|
| 1893-94                  | -         | -         | 18      | 65     | 83       |
| 1894-95                  | -         | -         | 51      | 76     | 127      |
| 1895-96                  | -         | -         | 84      | 69     | 153      |
| 1896-97                  | -         | -         | 123     | 11*    | 134      |
| 1897-98                  | -         | -         | 167     | 74     | 241      |
| 1898-99                  | -         | -         | 197     | 55     | 252      |
| 1899-1900                | -         | -         | 211     | 73     | 284      |

* Beginning with 1897 the courses offered to Doctors of Medicine have been given in May and June, after the compilation of the Register, and those in attendance are now counted in the enrolment of the succeeding year.
Changes in the Faculty.

Changes in the Faculty.

The death of Professor Craig occurred on the 8th of May, 1900, after a long period of declining powers. He was one of a company of bright young mathematicians who came to the University in its first year, attracted by the brilliant reputation of Professor Sylvester. He showed at once extraordinary powers of acquisition, as well as great ability in the treatment of certain subjects in the domain of higher mathematics. In addition to his contributions to mathematical journals, he published, in 1879, two manuals on the elements of the mathematical theory of fluid motion, and, in 1889, the first volume of a treatise on linear differential equations, a continuation of which was not completed at the time of his death. He rose, by successive promotions, from the grade of Fellow to those of Associate, Associate Professor, and Professor of Mathematics. From 1894 to 1899 he was the editor of the American Journal of Mathematics. In this capacity he was successful in securing the contributions of eminent mathematicians of England and the Continent, whose letters show high appreciation of the abilities of their American correspondent. Those who knew Dr. Craig only in his declining years, need to be told of the enthusiasm, the diligence, and the learning which for a long period were his distinguishing characteristics. Kindness toward young men and readiness to encourage them were among his admirable qualities. The minute adopted by the Board of University Studies has been printed in the Johns Hopkins University Circulars, No. 146, June, 1900 (page 67), and an estimate of his editorial services is given in the journal to which he devoted a large part of his energy.*

*American Journal of Mathematics, October, 1900.
Changes in the Faculty.

The chair of Mathematics has been filled by the appointment of Professor Frank Morley, lately Professor of Mathematics in Haverford College, Pa. He is a graduate of the University of Cambridge, England, where he has received the degrees of A. B. (in 1883), A. M. (in 1886), and Doctor of Science (in 1898). He came to this country in 1887, and has won distinction not only as a teacher, but also as a writer upon mathematical subjects. He entered at once upon the duties of his professorship in Baltimore, and he assumes, by request of the University, the editorial direction of the American Journal of Mathematics, founded in 1878 by Professor Sylvester, and now at the close of the twenty-second volume.

Dr. Jacob H. Hollander was given leave of absence, in March, in order that he might go to Porto Rico, at the request of the U. S. Government, as an expert in the study of the principles of taxation, in order to investigate the financial resources and conditions of that island. He was subsequently appointed Treasurer of Porto Rico, and, in consequence, his leave of absence was extended.

Dr. George P. Dreyer, Associate Professor of Physiology, has resigned this position to become a professor in the medical department of the University of Illinois. Dr. Dreyer received the degree of Bachelor of Arts in 1887 and that of Doctor of Philosophy in 1890, and he has successively held the posts of Fellow, Demonstrator, Associate, and Associate Professor.

Dr. Thomas S. Baker, Associate in German, has resigned this position to become Professor of Modern Languages in the Tome Institute, Port Deposit. He retains, however, connection with the University as a lecturer in German literature.
The following paragraph was accidentally omitted from page 10. It should have preceded the statement respecting Dr. Dreyer.

Dr. L. F. Barker, Associate Professor of Pathology, has accepted an important position in the University of Chicago, that of Professor of Anatomy. He had won distinction here as a teacher and investigator, and his work on the Nervous System has given him renown among physiologists and pathologists. It was with sincere regret that his resignation was accepted.

Other changes in the staff of the Medical School are referred to in the report of the Dean.
Changes in the Faculty.

Dr. Jesse W. Lazear, for three years past an Assistant in Clinical Microscopy in the Medical School, and at one time a resident physician in the Johns Hopkins Hospital, died of yellow fever in Havana, on the twenty-fifth of September, 1900. Dr. Lazear graduated as a Bachelor of Arts in 1889, and then pursued medical studies in the College of Physicians and Surgeons, New York. Last spring he received an appointment as Assistant Surgeon in the United States Army and was ordered to Cuba for duty in Havana, and he then resigned his position in our Medical School. He was a man of high personal character and unusual promise. His life was sacrificed in the promotion of medical science and in the service of humanity.

The following appointments and promotions have been made for the coming year, the tenure of office being fixed, in each case, by the action of the Trustees:

In the Philosophical Department:—

To be Professor of Mathematics:
Frank Morley, Sc. D.

To be Associate Professor of Physical Chemistry:
Harry C. Jones, Ph. D.

To be Lecturers:
Before the students of Finance and Economics:
Edward D. Durand, Ph. D., American Finance.
William F. Willoughby, Ph. D., Social Economics.

Before the students of German:
Thomas S. Baker, Ph. D., German Literature.

To be Associates:
Harry L. Wilson, Ph. D., Latin.
Commemoration of Maryland Worthies.

To be Instructors and Assistants:

William Kurrelmeyer, Ph. D., German.
J. Eustace Shaw, Ph. D., English.
Daniel N. Shoemaker, S. B., Zoology.
Henry S. West, Ph. D., English.

In the Johns Hopkins Medical School:

To be Associate Professors:

Thomas S. Cullen, M. D., Gynecology.
George P. Dryer, Ph. D., Physiology.
Reid Hunt, M. D., Ph. D., Pharmacology.
William W. Russell, M. D., Gynecology.

To be Associates:

Norman MacL. Harris, M. B., Bacteriology.
William G. MacCallum, M. D., Pathology.
Otto G. Ramsay, M. D., Gynecology.

To be Instructors:

Percy M. Dawson, M. D., Physiology.
Charles P. Emerson, M. D., Medicine.
Eugene L. Opie, M. D., Pathology.
Mervin T. Sudler, Ph. D., Anatomy.

To be Assistants:

William S. Baer, M. D., Orthopaedic Surgery.
Warren H. Lewis, M. D., Anatomy.
Frank W. Lynch, M. D., Obstetrics.
John E. MacCallum, M. D., Anatomy.
Harry T. Marshall, M. D., Pathology.

Commemoration of Maryland Worthies.

The Maryland Society of the Colonial Dames of America have placed in McCoy Hall a bronze tablet commemorative of the founding by Governor Francis Nicholson, in 1696, of the first free school in the colony of Maryland, at first known as King William's School, and subsequently as St. John's College. The presentation of this tablet was made the occasion of an afternoon assembly of ladies and gentlemen, March 24, 1900, when Dr. William Hand Browne gave
Commemoration of Maryland Worthies.

an address on Governor Nicholson and the free schools of his time. The tablet bears the following inscription:

TO
COMMEMORATE THE LIBERALITY
AND ZEAL FOR LEARNING
OF
FRANCIS NICHOLSON
GOVERNOR OF MARYLAND
BY WHOSE EXERTIONS AND BOUNTY
WAS FOUNDED IN 1696
THE FIRST FREE SCHOOL IN THE PROVINCE
THIS TABLET IS ERECTED BY
THE MARYLAND SOCIETY
OF THE
COLONIAL DAMES OF AMERICA
1900

The same association of patriotic ladies also offered to the Trustees, in June last, the sum of three hundred dollars for the purpose of providing in this University a course of lectures on American Colonial History, the first topic to be treated being the early history of Maryland. This gift has been accepted by the Trustees, and the course will be inaugurated during the coming session by lectures on early Maryland biography to be given by Dr. C. W. Sommerville. The characters that he has selected, with the concurrence of Dr. Christopher Johnston, who represents the Society of Colonial Dames, are these: Francis Nicholson, Daniel Dulany, John Hanson, John Eager Howard, Luther Martin, Robert Goodloe Harper. The circumstances under which these gifts were made were very gratifying to the authorities of the University, who heartily respond to the wish of the donors that the early patriots and statesmen of Maryland shall be perpetually held in honor by the students of American history.
Public Lectures.

Public Lectures and Lectures to Teachers.

During the past year a new experiment was tried with respect to admission to the public lectures of this University, and a small charge was made for admission to each of the courses. This had the effect of diminishing the attendance, and it appeared that, either from inattention or from unwillingness to pay the nominal charge, the public did not respond to our overtures. On the other hand the courses offered to teachers were remarkably well attended, and the charges for instruction were promptly met.

Percy Turnbull Memorial Lectureship.

The eighth course of lectures on this foundation was given by C. H. Herford, Litt. D., Professor of the English Language and Literature in the University College of Wales, and author of “Studies in the Literary Relations of England and Germany in the Sixteenth Century” (1886); a translation of Ibsen’s Brand, in the original metres, with introduction and notes (1893); “The Age of Wordsworth” (1897). He is also General Editor of the “Warwick Shakespeare” and of the “Warwick Library,” and he has recently completed the “Eversley Edition of the Works of Shakespeare,” in ten volumes (Macmillan Company).

The subject of the course was English Poetry, viewed and interpreted in its principal periods.

Topics.

* Nature and Romance in English Poetry.*

The Germanic Core of English Poets.
The Age of Chaucer.
The Remascence.
The Elizabethans.
Public Lectures.

The Seventeenth Century.
The Return to Nature and the Revival of Romance:
I. From Pope to Blake.
II. From Wordsworth to Tennyson.

The lectures were given in McCoy Hall, at 5 o'clock, beginning April 23.

DONOVAN LECTURES ON ENGLISH LITERATURE.

Professor C. T. Winchester, of Wesleyan University, Conn., gave a course of lectures on the Donovan foundation, his general subject being the Essayists and Reviewers of the Beginning of the Nineteenth Century.

TOPICS.
Hazlitt. De Quincey.
Lamb. Leigh Hunt.

The lectures were given in McCoy Hall at 5 p.m., beginning March 28.

LEVERING LECTURES BEFORE THE YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Levering Lectures were delivered by the Reverend W. H. P. Faunce, D. D., President of Brown University, March 13, 15, 16, at 5 p.m., in Levering Hall.

The subject of the course was the Use and the Abuse of the Bible.

GEORGE HUNTINGTON WILLIAMS MEMORIAL LECTURESHIP ON THE PRINCIPLES OF GEOLOGY.

This lectureship, inaugurated in 1897 by Mrs. George Huntington Williams, began with a course by Sir Archibald Geikie, Director-General of the Geological Surveys of Great
Public Lectures.

Britain and Ireland, who delivered in April of that year six lectures on The Founders of Geology.

The second course was given by Professor W. C. Brøgger, of the University of Christiania, Norway, on the Principles of a Genetic Classification of the Igneous Rocks, followed by five lectures on the Late Geological History of Scandinavia, as shown by changes of level and climate in southern Norway since the close of the glacial epoch.

The lectures were given in the geological laboratory at 5 p.m., beginning April 25 and closing May 3.

Several excursions were made, at the time of the course, into the region about Baltimore under the direction of the staff of the geological department.

LECTURES ON PSYCHOLOGY AND EDUCATION.

Dr. G. Stanley Hall, President of Clark University, gave ten lectures on Psychology and Education, in McCoy Hall, at 5 p.m., beginning February 5.

TOPICS.
Recent Methods and Results in the Study of the Soul.
Genetic Psychology: Animals, the Child, the Race.
Foods and Nutrition.
Motor Development and Education.
Health, Happiness, and the Education of the Feelings.
The Love and Study of Nature.
Fear and Anger.
Adolescence.
Sex in Education.
Religion and Science in their Relations to Education.

LECTURES ON THE FOUNDERS OF THE REPUBLIC.

Professor James Schouler, LL. D., of Boston, author of a "History of the United States under the Constitution,"
Lectures to Teachers.

delivered a course of biographical lectures on four of the great founders of the American Republic.

**TOPICS.**

Benjamin Franklin.  
George Washington.  
Alexander Hamilton.  
Thomas Jefferson.

The lectures were given in the Donovan Room, at 5 p.m., beginning March 7, and were open to the public.

Under the direction of a Committee consisting of Professors Adams, Clark, and Ames,—with Professor Griffin during the absence of Professor Adams,—several courses of lectures were arranged for the teachers of Baltimore. The attendance was so large, especially upon the courses in Physics, Physical Geography, and English literature, that similar arrangements are proposed for the next academic year.

The teachers' courses were these:

(a) on modern English literature, by Professor A. H. Smyth, of Philadelphia,—eighteen lectures.

(b) on advanced Physical Geography,—five lectures on Geology by Dr. G. B. Shattuck, and fifteen on Meteorology by Dr. O. L. Fassig.

(c) on select topics in Physics,—twenty lectures by Professor Ames.

(d) on Botany,—twenty lectures by Dr. D. S. Johnson.

The class lectures of Dr. Brackett on Public Charities, of Dr. Hollander on City Government, and of Dr. F. M. Warren on the Modern French Drama were delivered in the Donovan Room and opened to the public.

A second course of lectures provided for the historical department by the liberality of Dr. Albert Shaw, of New York, was given during the past session by Dr. J. M.
Callahan, a graduate and a former Fellow of this University. The course included twelve lectures on America in the Pacific, and twelve lectures on the Diplomatic History of the Southern Confederacy.

In addition to the longer courses, occasional lectures were given to the public, or before special departments of the University. The most noteworthy were these:

Frederick W. Holls, Esq., Secretary and Counsel to the American Commissioners to the Peace Conference at the Hague in 1899, delivered two lectures in McCoy Hall on the work of that conference: the first (open to the public), February 2, and the second (designed for students of historical and political science and of law), February 3.

Professor Hugh Walker, of St. David's College, Lampeter, South Wales, the author of "Three Centuries of Scottish Literature," "Greater Victorian Poets," and "The Age of Tennyson," gave a lecture in the Donovan Room, April 6. The subject was the Contrary Influences of Rationalism and the Catholic Revival on Victorian Literature.

An illustrated lecture by Mr. Frederick E. Ives, of Philadelphia, on Colour Photography, was given before the Scientific Association of the Johns Hopkins University, on the evening of March 2, in McCoy Hall. Mr. Ives is the inventor of the "three-colour system" of colour photography, and he kindly consented to describe his method and to show illustrations of its results.

The Reverend Canon H. D. Rawnsley, of Keswick, England, a promoter of the society lately formed in England to preserve the shrines of literary and historical association, addressed the students, October 25, in McCoy Hall.
Commemoration Day.  

As an introduction to the courses arranged for teachers, single lectures were given by Dr. James E. Russell, Dean of the Teachers College, New York, and Dr. James McAlister, President of the Drexel Institute, Philadelphia.

Public meetings have been held during the year in the halls of the University by the following associations:

The Charity Organization Society, the Baltimore Society of the Archaeological Institute of America, the Maryland Audubon Society, the Municipal Art Society of Baltimore, the Baltimore County Teachers' Institute, the Maryland Folk-Lore Society, the Maryland State Federation of Women's Clubs.

Commemoration Day.

The exercises of Commemoration Day were observed as usual on the twenty-second of February, 1900, in McCoy Hall. The principal address was given by Dr. Benjamin I. Wheeler, President of the University of California, his subject being the Duties of the University toward the Commonwealth.

The degree of Doctor of Philosophy was conferred upon two candidates and the degree of Bachelor of Arts upon five candidates. An incident of the proceedings was the presentation by the Harvard Club of Maryland, to the President of the University, of a replica of the official chair of the President of Harvard University. The annual meeting of the University Alumni Association was held in the morning, and was followed in the evening by the annual dinner.
Commencement.

The Commencement exercises were held in the Academy of Music on the twelfth of June, 1900, Professor Gildersleeve presiding. Diplomas were given to forty-two Bachelors of Arts, thirty-three Doctors of Philosophy, and forty-three Doctors of Medicine, the candidates being presented respectively by Dean Griffin, Professor Remsen, and Dean Howell. The principal address was delivered by Dr. William Osler, Professor of Medicine. The music was rendered on this occasion, as it was on Commemoration Day, by an orchestra under the leadership of Mr. E. L. Turnbull (A. B., Johns Hopkins, 1893). In the evening the graduates and their friends were received by the faculty in McCoy Hall.

Marshall Prize.

The John Marshall Prize was awarded on Commencement Day to James M. Callahan (Ph. D., Johns Hopkins, 1897), as a recognition of the value of his recently published volume entitled "Cuba and International Relations."

The previous recipients of this prize are named below:

1892. Henry C. Adams, Ph. D.
1892. Charles H. Levermore, Ph. D.
1892. John M. Vincent, Ph. D.
1892. Woodrow Wilson, Ph. D.
1893. Charles M. Andrews, Ph. D.
1894. Amos G. Warner, Ph. D.
1895. Albert Shaw, Ph. D.
1896. Westel W. Willoughby, Ph. D.
1897. J. Franklin Jameson, Ph. D.
1898. Charles D. Hazen, Ph. D.
1899. Jacob H. Hollander, Ph. D.
Prizes.

TOCQUEVILLE MEDAL.

The gold medal annually offered to students of this University by the Baron Pierre de Coubertin, of Paris, in honor of his illustrious countryman, Alexis de Tocqueville, the author of "Democracy in America," was awarded on Commencement Day to James E. Routh, Jr., of the class of 1900, for his essay on the "French Colonial System."

SYLVESTER PRIZE.

Through the kind mediation of a graduate of this University, Mr. Siegmund B. Sonneborn, A. B., 1893, several friends have given us a sum of money sufficient for the annual award of a prize in Mathematics, to bear the name of Professor Sylvester, the great mathematician, who was a professor in this institution from 1876 to 1883. The prize will consist of a likeness of Sylvester, in bronze, which has been modelled by Mr. Charles Calverley, of New York, under the supervision of Mr. Samuel P. Avery. The terms on which the prize is to be awarded will hereafter be announced. The names of the donors are Abraham G. Hutzler, Seymour Mandelbaum, Nathan Miller, Edward Naumburg, Henry Sonneborn, Siegmund B. Sonneborn, and Simon Stein.

PORTRAITS.

At the request of the Faculty and at their expense, Mr. Carroll Beckwith, N. A., of New York, has painted a full-length portrait of the first president of this University, representing him in the gown and hood which he has been accustomed to wear at public ceremonials. The painting was presented to the University before the last Commencement.
A constant friend, Mr. Theodore Marburg, of Baltimore, has caused a portrait of Professor H. B. Adams to be painted for the University by Mr. Thomas C. Corner, of Baltimore, and this gift has been gratefully received and acknowledged.

State Aid.

When the Legislature assembled in January, 1900, the needs of the University for financial aid were presented in the following memorial addressed to the Senate and the House of Delegates:

A MEMORIAL
FROM THE JOHNS HOPKINS UNIVERSITY TO
THE LEGISLATURE OF MARYLAND.

To the General Assembly of the State of Maryland:

The appropriation which was made by the last Assembly for the support of the Johns Hopkins University, with gifts of a still larger amount from individual citizens of Baltimore, enabled the University to continue its work with vigor and success. The serious embarrassments which threatened its life were thus for a time averted, and the Trustees and Faculty were strengthened in their effort to maintain the University on the high plane which it has held since its foundation, a quarter of a century ago. It is not possible in a brief memorial to set forth all the activities of the University; but attention is called to the large number of students, Marylanders and those who come to Maryland from distant states for the purpose of continuing their education; to the increasing renown of the staff of instructors; to the eight scientific periodicals that are here published, and distributed throughout the scientific world; to the books and memoirs that are written by the professors; to the libraries, collections, and laboratories here maintained; to the lectures offered to the public, and especially to the teachers of the public schools; to the distinction of the Medical School; to the recognized usefulness of the three state bureaus which are here aided,—the Geological Survey, the Weather Service, and the Improvement of Highways; to the co-operation of the members of the University in every measure which will contribute to the health, education, and prosperity of the people of Maryland; and finally to the endeavor here put forth to enlarge the bounds of human knowledge and set forth its applications to the service of mankind.
The need of pecuniary support is as great now as it was two years ago. The litigation in which the University was then involved was settled by a virtual compromise, which has left the endowment seriously impaired. Unless it is greatly enlarged, the Johns Hopkins University must relinquish the position which it now holds among the educational forces of this country.

You are respectfully urged, for the honor and good of the State, for the benefit of the rising generation, and for the promotion among our people of science, literature, and education, to continue the appropriation which has proved so serviceable during the past two years.

THE BOARD OF TRUSTEES:

C. Morton Stewart, President, William T. Dixon,
Lewis N. Hopkins, Benjamin F. Newcomer,
Francis White, Arthur George Brown,
J. Hall Pleasants, Eugene Levering,
James L. McLane, Richard M. Venable,
W. Graham Bowdoin,
The President of the University, ex-officio.

Baltimore, January 3, 1900.

Senator J. M. Moses, of Baltimore, presented the memorial to the Senate, and Hon. Ferdinand C. Latrobe presented it in the House of Delegates,—and its request was ably supported by these gentlemen and by other friends to whom our hearty acknowledgments are due. A proposal to establish free scholarships was not favored by members of the Legislature (to whom this disposition of the University was made known) from an apprehension upon their part, as we have been informed, that the State would thus become indirectly committed to a policy of permanent support. An appropriation of $24,000, annually, for two years, was finally made in the enactment commonly called the "Omnibus Bill." This aid, although much less than was hoped for, is a very important addition to our resources, and the thanks of the University are given to all who favored the appropriation, whether members of the Legislature, officers of the State government, or private citizens interested in the advancement of higher education in Maryland.
Serial Publications.

The various serials which are published under the auspices of the University have appeared as usual. The American Journal of Mathematics is in its twenty-second volume, the American Journal of Philology is in its twenty-first, and the American Chemical Journal its twenty-fourth. Of the Studies in Historical and Political Science the eighteenth series is nearly completed, and several extra volumes have been issued. The Journal of Experimental Medicine has entered upon its fifth volume, and the fifteenth volume of Modern Language Notes is nearly complete. The Contributions to Assyriology, the Memoirs from the Biological Laboratory, and the Journal of Terrestrial Magnetism have also gone forward under the editorial direction of University professors.

Geological Survey and Weather Bureau.

The Maryland Geological Survey, under the administration of Professor W. B. Clark, is maintained by the State of Maryland and directed by a board of which the Governor, the Comptroller, the President of the Maryland Agricultural College, and the President of the Johns Hopkins University are members. Rooms are provided for the various departments of the Survey in the University, and our apparatus and collections are freely accessible.

The work of the Survey includes:
the actual survey of the territory of Maryland, its mountains, hills, plains, river courses and coasts;
the preparation of maps of the territory surveyed in forms and numbers adapted to general distribution;
the study of the mines, quarries, clay-beds and other mineral resources of the State;
the determination of the magnetic variation within the State, upon which all lines of property are ultimately dependent;
the collection of examples of ores, rocks, minerals and earth, for study and comparison with those of other regions;
the training of young men qualified to be teachers and surveyors in the department of geology and mineralogy, or to be aids in mining and other industrial pursuits;
the diffusion of knowledge in respect to the characteristics and resources of the State by means of books, pamphlets, maps, lectures, newspaper articles, excursions and conferences with those who for any reason seek for information.

The third volume of the reports of the Survey has been issued, and was presented to the Legislature in the Spring of 1900.

Connected with the Geological Survey, as one of its most important departments, is the Highway Division, which is devoted to the study of roads, and especially to the measures which may be adopted in this State for the construction and improvement of the means of communication. Professor H. F. Reid is the head of this division. His observations, his comparison of our roads with those of other regions, his well-chosen apparatus for the test of materials, and his constant study of the characteristics of different parts of the State, enabled him, in conjunction with the other members of the Survey, to prepare a valuable report which was submitted to the last Legislature.

The State Weather Bureau, in connection with the United States Weather Bureau, has continued to occupy rooms provided for it, free of charge, in one of our buildings.
The University of Cracow.

As a representative of the Johns Hopkins University I had the pleasure of attending, with my colleague, Professor Haupt, in June last, at Cracow, ancient capital of Poland, the five hundredth anniversary of the University Jagiellonski. It was a brilliant festival, lasting three days. It was made memorable by the presence of distinguished scholars from all parts of Europe, and, among them, of the Minister of Public Instruction and other official representatives of the empire of Austria. The ceremonies included a religious service, processions, banquets, private hospitality, addresses, the bestowal of honorary degrees (one of which came to Professor Simon Newcomb, of this University), and the unveiling of a statue of Copernicus, a student in Cracow four hundred years ago. The enthusiasm with which the loftiest ideals of literature and science have been upheld, amid all the perils of time, war, political changes, and academic reorganization, made a deep impression upon all the visitors. The venerable university is just as vigorous, as full of hope, and as much the object of pride, as if it were but newly created by the gifts of the citizens of Cracow.

The Twenty-fifth Anniversary of Dr. Welch's Graduation as a Doctor of Medicine.*

The former pupils of Professor William H. Welch, M. D., LL. D., have commemorated the twenty-fifth anniversary of

*Dr. Welch graduated at Yale in 1870 and received the degree of Doctor of Medicine in 1875 from the College of Physicians and Surgeons, Columbia University, New York. He held the position of Professor of Pathological Anatomy in Bellevue Medical College, prior to his call to Baltimore in 1884.
Conclusion.

his Doctorate in Medicine by the publication of a quarto volume (1059 pp.), containing thirty-eight papers especially contributed by those who have worked under his instruction and inspiration. The volume, which is fully illustrated, was presented to Dr. Welch on the evening of May 4, 1900. The presentation address was made by Dr. W. T. Councilman, Professor in Harvard University, and Dr. Welch replied in a speech which was full of personal allusions to those who have been his teachers and pupils. Both these speeches are published in the Johns Hopkins Hospital Bulletin (No. 111) for June, 1900. In the same number of this journal brief abstracts are given of all the contributions to this volume. It is an unusual event in the academic annals of this country, and not a common event elsewhere, to offer such evidence of his influence as a teacher and as an investigator to a university professor who is still in the full discharge of all the duties of his professorship. The Johns Hopkins University may be proud of such a tribute to a member of its faculty; and may be grateful to Dr. Councilman and his associates in the preparation of this volume, for bringing to mind the central idea of this University, that it is its duty both "to impart knowledge and to increase knowledge" by original research. Dr. Welch is a brilliant example of the double service that a professor can render, and it is a pleasure to know that he does not stand alone among his colleagues and pupils in devotion to these high ideals.

CONCLUSION.

Before closing this report, may I express a deep sense of gratitude for the tokens of confidence and regard which came to me, most unexpectedly, in the public exercises of Com-
memoration Day, February 22, 1900. At a pause in the programme, Professor Gildersleeve, the senior of the professorial corps, came forward and read a letter to the President of the University which was written in the name of his colleagues and associates in the Faculty, commemorating a period of service that has extended through twenty-five years. A copy of this letter, in the form of a diploma, handsomely illuminated, was handed to the President. It concluded with a request that he would sit for his portrait to a distinguished artist in New York, whose services had been secured.

To this gratifying address an immediate response was made, recalling my obligations to all in the Faculty and in the Board of Trustees, as well as to those citizens of Baltimore who have helped to make the office I hold so honorable and pleasant. I cannot recall the language then employed, for it was unpremeditated and was not reported, but I shall never forget the sentiments that it expressed, nor cease to be thankful for the evidences of confidence and good-will which I then acknowledged. No higher reward can be given for services extending through a quarter of a century than the appreciation of those who are most familiar with the responsibilities, anxieties, and difficulties of the office I have held; nor can I forget that whatever success the University has attained and whatever may be its degree of renown, the principal credit is due to the corps of learned and devoted men who have constituted the Faculty.

This incident was not the only recognition of the anniversary. The graduates of Harvard University, resident in Baltimore, had caused a replica to be made of a quaint chair which has been for several administrations—I do not know
exactly how long—the official chair of the President of Harvard. The presentation was made by Professor W. S. Thayer, M. D., President of the Harvard Club in Baltimore. The relations of this University to Harvard were so close at the very beginning, and have always been so friendly, that this gift is particularly acceptable.

At an earlier day I received from Dr. Paul Haupt, Professor of the Semitic Languages, a congratulatory letter so unique that, notwithstanding its personal nature, I venture to speak of it. The epistle was written in the cuneiform characters of the ancient Assyrians and, so far as applicable, their phraseology was employed. He afterwards caused this letter to be written upon two small tablets of clay—one in the Assyrian and one in the Babylonian character,—the aspect of which is that of a letter which might have been addressed to the head of a university several centuries before our era.

Early in the spring the Trustees of the University proposed to the President, in view of his long-continued service, a vacation of a year. It did not seem to him desirable that the head of the University should be absent so long from his post, unless ill-health demanded release, and as he could not plead this excuse, it was arranged that he should go to Europe in April, and attend the Congress of Higher Education in Paris and the Cracow celebration already referred to. He returned to Baltimore on the seventh of October. During the absence of the President, the duties of his office were distributed. The Chairman of the Executive Committee, Mr. McLane, gave more than his usual attention to those matters which required the action of the trustees, Professor Gildersleeve and Professor Remsen devoted themselves to the
Conclusion.

interests of the graduate students, while Professor Griffin in the College work and Professor Howell in the Medical School guided the affairs of those important departments. Professor Gildersleeve, as already stated, presided at Commencement. To all whose cooperation contributed to the pleasure and refreshment of his vacation, the President returns once more his grateful acknowledgments.

As I look over the year, it seems to me that every part of the University has been making good progress. We need a great deal more money in order that the work may go forward without anxieties or embarrassments, and that in the future we may do as much for our students and for the advancement of knowledge as we have done in the past. So far as attention to their various duties is concerned, there is nothing to be desired, in the efficiency of the staff. Their efforts to advance the departments of knowledge to which they are devoted, their success as teachers, writers, and investigators, their readiness to serve the public interests, deserve the cordial support of the community in which this institution is established. It is especially gratifying to observe the increasing importance of the Johns Hopkins Medical School. Notwithstanding the high standard of admission that has been maintained, the number of students is large, and the promptness with which their services are called for, after they attain the degree of Doctor of Medicine, is the best possible assurance of the value of the training here imparted.

The prominence which has been given in this report to subordinate matters, especially to the public lectures delivered from time to time, may obscure the fact that the principal work of the university is done quietly and without observa-
Conclusion.

The regular daily duties of the instructors in prosecuting their own studies, their efficiency in guiding the scholars committed to their charge and in making contributions to the progress of science by cooperation in the societies established among us and elsewhere, and their publications, are the real test of excellence. The life of the university is not made apparent by any sensational paragraphs, or by fulsome announcements of the work that is here undertaken. Those who are interested in the intricate activities of the university, will find in the reports that are printed in the appendix ample statements of what has been attempted and accomplished in the past year. These printed statements should not escape the scrutiny of the Trustees and of those who are contributors to the support of this institution. Even more details may be found by an examination of the Johns Hopkins University Circulars, which appear from time to time and give the enrolment in every class, as well as other information pertaining to the actual progress of affairs.

It had been my purpose to close this twenty-fifth report with some retrospective statements concerning the period that has passed since the university was organized; but the sentiment of my colleagues appears to be that we should commemorate the beginning of instruction in October, 1876, by a celebration in October, 1901. A committee has been appointed to consider this suggestion and to make the preliminary plans. Looking forward to this date as a suitable occasion for looking backward as well as forward, I postpone the proposed review.

Respectfully submitted,

Daniel C. Gilman,
President.

Baltimore, November 5, 1900.
REPORTS ON THE INSTRUCTION IN THE CHIEF BRANCHES OF STUDY.

Prepared by the Principal Instructors in the Several Departments.

Mathematics.

Graduate Courses.

Professor Craig gave the following courses:

Advanced Theory of Functions.—This course was begun with a rather full study of Dirichlet's Theorem, especially for two variables. The methods of Neumann and Schwarz were studied and in particular the method of Poincaré—as adapted to two dimensions by Paraf. This was followed by the general theory of algebraic functions of a single variable, the corresponding Riemann's surfaces, and Abelian integrals. This course was concluded with a fairly full account of Poincaré's work on Fuchsian and Kleinian Groups and the associated automorphic functions. The treatises of Picard, Appell-Goursat and Stahl and the well-known memoirs of Poincaré served as the basis of the work.

Partial Differential Equations of First Order.—This course opened with the discussion of Cauchy's existence theorem and Mme. Kowaleski's demonstration for linear partial differential equations. This was followed by a study of Jacobian complete systems and their integration. These equations of the first order in their general form and their integration were studied. The geometric significance of the results was emphasized, in particular the properties of characteristics. The integration of systems of equations in involution by the methods of Jacobi and Mayer, and contact transformations were the concluding subjects. The course was based on the treatise by Goursat and frequent references were made to memoirs by Lie, Darboux, and others.

Theory of Surfaces.—An algebraic treatment of differential parameters preceded the discussion of twisted lines and the general properties of surfaces, which in turn was followed by a reasonably full account of the theory of lines traced on surfaces. Then the general theory of congruences and, in particular, rectilinear congruences were studied. Throughout this
Dr. Cohen gave the following courses:

   This course included a rather full account of the theory of series, the theory of line and surface integrals, a brief account of Dirichlet's problem, the elementary theory of uniform functions and of algebraic functions, and concluded with a short study of singly and doubly periodic functions.

   In this course was given a fairly full account of the subject as treated in Salmon and Clebsch-Lindemann, including the theory of birational transformation. The course concluded with a rather detailed study of cubic and quartic curves.

   This course was based on Lie's Vorlesungen über Continuierliche Gruppen, and on his Vorlesungen über Differentialgleichungen for applications of the subject.

**Undergraduate Courses.**

These courses are the same from year to year. During the year 1899-1900 they were given as follows:

*For Candidates for Matriculation:*
- Solid Geometry. *Four times weekly, till Christmas.* Dr. Cohen.
- Trigonometry. *Four times weekly, from January 2 to March 26.* Dr. Cohen.
- Analytic Geometry. *Four times weekly, from March 27 to end of year.* Dr. Cohen.

*First Year Course (Minor Course):*
- Analytic Geometry. *Four times weekly, till Christmas.* Professor Hulburt.
- Differential and Integral Calculus. *Four times weekly, from January 2 to end of year.* Professor Hulburt.

*Second Year Course (Major Course):*
- Differential and Integral Calculus (special topics) and Determinants. *Four times weekly, till Christmas.* Professor Hulburt.
- Theory of Equations and Projective Geometry. *Four times weekly, January 2 to April 11.* Professor Hulburt.
- Solid Analytic Geometry. *Four times weekly, April 19 to end of year.* Professor Hulburt.

*Third Year Course (Elective):*
- Differential Equations. *Twice weekly, through the year.* Dr. Cohen.

**Simon Newcomb,**
*Professor of Mathematics and Astronomy.*
Physics.

The Physical Laboratory has been open daily during the year for the work of advanced and undergraduate students. Regular courses of lectures have been given; and meetings have been held weekly for the reading of the current journals.

The Physical Seminary has met once a week, under the direction of Professor Ames. The main study for the first half-year was "Principles of Thermodynamics," and for the second half-year, "Spectroscopy and Spectrum Analysis." A series of brief biographies of English and Continental physicists was also prepared by the graduate students and read at these meetings.

The regular courses of instruction were as follows:

By Professor Rowland:

Heat Conduction and Physical Optics. Four times weekly, through the year.
Theory of Dimensions. One hour weekly, second half-year.

By Professor Ames:

The Physical Seminary. Two hours weekly, through the year.
Theoretical Mechanics. Twice weekly, first half-year.
Hydrodynamics. Twice weekly, second half-year.
Advanced General Physics (with the assistance of Dr. Bliss). Four times weekly, through the year.
General Physics (Minor Course). Four times weekly, through the year.

By Dr. N. E. Dorsey:

Conferences on Professor Rowland's lectures. One hour weekly, through the year.

By Mr. J. B. Whitehead:

Applied Electricity. Twice weekly, through the year.

By Dr. W. J. A. Bliss and assistants:

Laboratory instruction for undergraduate students. Daily, through the year.

In the Physical Seminary a series of papers on the following subjects were read by the advanced students and assistants:

Dr. N. E. Dorsey—Stellar Spectra.
L. A. Parsons—Gaseous Spectra.
H. M. Reese—The Zeeman Effect.
N. A. Kent—Numerical Relations between Spectra.
W. B. Huff—Prismatic and Grating Spectroscopes.
N. E. Gilbert—Interference Spectroscopes.
L. M. Potts—Resolving Power and Efficiency.
H. Pender—Spectroscopy of the Infra-Red.
A. W. Ewell—The Solar Atmosphere.
A. W. Smith—Absolute Measurement of Wave-lengths.
R. E. Loving—The Echelon Spectroscope.
R. F. Whitehead—The Effect of Pressure on Radiation.
C. A. Kraus—The Nature of White Light.
E. D. Pierce—The Leonids and Meteors.
Dr. G. O. James—Green's Theorem; The Second Principle of Thermodynamics.
Dr. W. J. A. Bliss—The Work of Helmholtz.

In the laboratory the following work has been done:

The reduction and publication of the tables of wave-lengths of the solar spectrum have been continued by Mr. L. E. Jewell, who has also carried out an extensive series of experiments on the use of colored solutions as photographic screens. Several papers on these subjects have been published by him in the Astrophysical Journal.

The investigation of the Zeeman effect has been continued by Mr. H. M. Reese, with the assistance of Mr. N. A. Kent, and many interesting conclusions have been obtained. This work has been offered by Mr. Reese as his dissertation for the degree of Doctor of Philosophy.

A study of electrical absorption in condensers and of the hysteresis of iron with alternating currents has been continued by Mr. L. M. Potts; and the results of the investigation were offered by him as a dissertation for his degree of Doctor of Philosophy.

Mr. W. B. Huff has made an elaborate investigation of the various spectra of mercury and the means by which the varied phenomena can be produced. He offered this as a dissertation for his Doctor's degree in June.

Dr. N. E. Dorsey, with the assistance of Mr. A. W. Ewell, made a study of the connection between dispersion and length of the train of ether-waves in glass; but their results were purely negative.

Mr. N. E. Gilbert has made a series of measurements, in order to see if electrical resistance depended upon the existence of a magnetic field produced by the current through the conductor whose resistance was being studied. He also made a long and elaborate investigation of a possible connection between magnetism and the rotation of matter. Both of his investigations, which are of great importance theoretically, have given negative results.

Mr. C. C. Schenck has continued his investigation of the spark spectra of various metals, and, in particular, has analyzed the sparks in many cases by means of a prism and a rotating mirror. He has in this way studied the effects of introducing into the circuit capacity, inductance, and so on.

Mr. A. W. Ewell has performed some interesting experiments on rotatory polarization, and has also devised a new form of electrodynamometer.

Mr. C. A. Kraus has made a long careful study of the nature and conductivity of solutions of metals in ammonia. This work is nearly ready for publication.
Chemistry.

Mr. J. B. Whitehead has done some interesting work on the theory of induced electromotive forces in transformers. An account of this work has already appeared in the "Electrical World."

Mr. L. A. Parsons has begun a study of the variations in the spectrum of hydrogen, and Mr. H. Pender has prepared two forms of interferometers to be used in this same study for a further analysis of the spectrum lines.

Mr. A. W. Smith has performed some preliminary experiments in connection with the subject which he expects to continue next year, the latent heat of fusion of ice.

A large number of students in the laboratory took part in the observations of the solar eclipse of May 28, in collaboration with the United States Naval Observatory. Mr. L. E. Jewell was stationed at Griffin, Ga., where he made his observations, assisted by four former students of the laboratory. Professor Ames was at Pinehurst, N.C., where he was assisted by Dr. N. E. Dorsey and Messrs. Reese, Huff, Gilbert, Parsons, and Kent. The results of their observations of the eclipse will soon be ready for publication.

Abstracts of nearly all the above researches appeared in the Johns Hopkins Circulars for June, 1900.

During the year there have been enrolled 22 graduate students following Physics as their principal subject, three of whom, in June, received the degree of Doctor of Philosophy.

H. A. Rowland.
Professor of Physics.

Chemistry.

The work in the Chemical Laboratory has been carried on as usual, though with some interruption, through the year. The interruption was due to a serious fire that occurred on the morning of December 4, which resulted in the almost complete destruction of the third story and the very serious injury of the rest of the building. For a few weeks the most advanced students found accommodations in the Biological Laboratory, and during that time the first and second stories of the Chemical Laboratory were sufficiently restored to enable us to resume our work.

By the permanent transfer of the work in Physical Chemistry to a room fitted up for chemical purposes in the basement of the Biological Laboratory, space enough was secured in the Chemical Laboratory to accommodate all, and at the beginning of the year 1900 all were at work. The builders have since restored the third story and it is now in better condition than before the fire. During the summer the rest of the building will be repaired, cleaned, and repainted.
Courses of Instruction, 1899-1900.

Lectures and class-room instruction have been given as indicated below:

By Professor Remsen:
The Chemistry of the Compounds of Carbon. *Seven times weekly, for part of the year, and five times weekly, for the rest of the year.*
Meetings for Reports on the Current Journals of Chemistry. *Weekly, through the year.*

By Professor Morse:
General Inorganic Chemistry (Major Course). *Four times weekly, until Christmas.*
Compounds of Carbon (Major Course). *Four times weekly, from Christmas until the end of the year.*

By Professor Renouf:
General Chemistry (Minor Course). *Four times weekly, through the year.*

By Dr. Jones:
Physical Chemistry (Advanced Course). *Three times weekly, through the year.*
Physical Chemistry (Elementary Course). *Twice weekly, until February.*

By Dr. Gilpin:
Reviews in General Chemistry (Minor Course). *Weekly, through the year.*

A course of historical lectures was given by graduate students. The names of the lecturers and their subjects are given in the following table:

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. J. Chambers</td>
<td>Oximes</td>
</tr>
<tr>
<td>J. C. W. Frazer</td>
<td>Lactic Acid</td>
</tr>
<tr>
<td>B. P. Caldwell</td>
<td>Lactones</td>
</tr>
<tr>
<td>F. E. Clark</td>
<td>Phosphoric Acids</td>
</tr>
</tbody>
</table>

Ten candidates presented themselves for the degree of Doctor of Philosophy. Their names, with the titles of their dissertations, are given below:

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. V. Black</td>
<td>The Permanganates of Barium, Calcium, and Strontium.</td>
</tr>
<tr>
<td>W. M. Blanchard</td>
<td>The Chlorides of Parabromorthosulphobenzoic Acid, and some of its Derivatives.</td>
</tr>
<tr>
<td>H. Canter</td>
<td>Orthophenylsulphonebenzoic Acid and Related Compounds.</td>
</tr>
<tr>
<td>C. E. Caspari, I.</td>
<td>An Investigation of the Fatty Oil in the seeds of Lindera Benzoin.—II. Lauric Acid and some of its Derivatives.</td>
</tr>
<tr>
<td>H. Chambliss</td>
<td>The Permanganates of Magnesium, Zinc, and Cadmium.</td>
</tr>
<tr>
<td>W. W. Garner</td>
<td>Action of Aromatic Sulphonchlorides on Urea.</td>
</tr>
<tr>
<td>D. W. Horn</td>
<td>A Study of the Action of Carbon Dioxide on the Borates of Barium, and of the Action of Acid Borates on the Carbonate of Barium at High Temperatures.</td>
</tr>
<tr>
<td>R. E. Humphreys</td>
<td>The Action of Phenol on the Chlorides of Orthosulphobenzoic Acid.</td>
</tr>
<tr>
<td>A. M. Patterson</td>
<td>The Reduction of Permanganic Acid by Hydrogen and Ethylene, and a Study of some of its Salts.</td>
</tr>
</tbody>
</table>
These will be published in separate form as dissertations, and the more important parts will be published in the American Chemical Journal as soon as place can be found for them.

There have been enrolled thirty-four graduate students following Chemistry as their principal subject.

Volumes XXII and XXIII of the American Chemical Journal have been issued.

IRA REMSEN,
Professor of Chemistry.

Geology.

The Geological Laboratory was open daily, except Sunday, throughout the year to graduate and undergraduate students. The largely-increased facilities granted to the department library proved of much value to the advanced work. Special rooms had been arranged at the close of the previous academic year to receive the Abbe, Williams, and Lewis libraries, and these, as well as the volumes previously belonging to the University, now occupy a series of connecting rooms.

The invitation extended during the previous academic session to Professor W. C. Brögger, of the University of Christiania, to deliver the George Huntington Williams Memorial lectures was, as mentioned in my report of a year ago, accepted, and Professor Brögger reached Baltimore during April, 1900, and delivered an important course of lectures which were listened to not only by the students of the Johns Hopkins University, but by a number of geologists from other institutions. These lectures, seven in number, were divided between petrographical and glacial subjects. Two lectures were given on The Principles of a Genetic Classification of Igneous Rocks, and five lectures on The Late Geological History of Scandinavia, as shown by changes of level and climate since the close of the glacial epoch.

During the year the following courses of instruction were given:

(a) General Geology, by Professor Clark and Dr. Shattuck. Four lectures and one afternoon in practical work each week, throughout the year.

(b) Historical Geology, by Professor Clark. Two lectures each week, throughout the year.

(c) Geological Physics, by Associate Professor Reid. Two lectures each week, first half-year.

(d) Experimental Geology, by Associate Professor Reid. Two lectures each week, second half-year.

(e) Mineralogy, by Associate Professor Mathews. Four lectures and two laboratory exercises each week, throughout the year.

(f) Petrography, by Associate Professor Mathews. Three lectures each week, throughout the year.
Courses of Instruction, 1899-1900.

(g) Exploratory Surveying, by Associate Professor Reid. Two lectures each week, second third-year.

(h) Stratigraphic and Structural Geology, by Mr. Willis. Two lectures each week, last third-year.

(i) The Principles of Geology, by Professor W. C. Brügger. Seven lectures in April.

(j) Geological Conferences. Fortnightly, throughout the year.

(k) Student Lectures. Fortnightly, throughout the year.

Original Work and Publications. Geological work was continued by Professor Clark, both as geologist on the U. S. Geological Survey and chief of the Maryland Geological Survey, on the Coastal Plain deposits of the Middle Atlantic States, particular attention being given to the preparation of a monograph, with the aid of Mr. G. C. Martin, on the Eocene deposits of the State. Professor Clark was also actively employed in the management of the State Geological Survey and State Weather Service and in the supervision of the publications of those bureaus. Professor Clark was appointed during the past year, by Governor Smith, Commissioner on behalf of the State of Maryland to resurvey the Mason and Dixon line, and will be connected in this work with the Superintendent of the U. S. Coast and Geodetic Survey and the Commissioner of Pennsylvania.

Associate Professor Reid devoted his attention to the study of various problems connected with ice movement, and during the summer of 1900 visited the glacial district of eastern Switzerland where he has for several years been conducting special investigations. As Chief of the Division of Highways of the Maryland Geological Survey, Dr. Reid has been employed in a study of the various physical problems connected with road-metals and in directing the work of the Highway Division.

Associate Professor Mathews has continued his work in the Piedmont belt of Maryland, devoting himself to a study of the crystalline areas of Montgomery and Howard counties. Dr. Mathews was actively engaged throughout most of the year as Assistant State Geologist and in editing the publications of the State Geological Survey.

Dr. Shattuck has been engaged the past year in a study of the Neocene and Pleistocene deposits of the southern counties of the State. He has reached the solution, with the aid of his associates, of many of the difficult problems connected with these formations. Several of the students connected with the geological department have been associated with him in this work, among them Dr. L. C. Glenn, who received his degree a year ago, and Messrs. G. C. Martin, Benj. L. Miller, and W. D. Neal.

Dr. Fassig has been engaged in a study of special problems in connection with his work in meteorology. In March, Dr. Fassig was sent by Professor Willis L. Moore, Chief of the U. S. Weather Bureau, to the Paris Exposition to take charge of the exhibit of the National Service. Since his return in July, Dr. Fassig has been placed in charge of the Baltimore office and now has control of this important section of the U. S. Weather Bureau.
One candidate presented himself in June for the degree of Doctor of Philosophy, Mr. R. B. Rowe, who for the three preceding years had been connected with the work of the geological department. His thesis was on The Lower Devonian of Maryland. This report will be brought out as one of the publications of the Maryland Geological Survey.

Several other investigations were started by other members of the department and will result in later contributions.

Excursions and Annual Geological Expedition. Numerous short excursions were made during the autumn months into the region immediately adjacent to Baltimore, both in the Coastal Plain and the Piedmont Plateau. Two more extended expeditions were made in the spring, one into the southern counties of the State and the other into western Maryland. The excursion into southern Maryland was made, through the courtesy of the State Board of Public Works, upon one of the State steamers, and was arranged especially for Professor Brögger and those who were in attendance upon his lectures in order that they might see the fine section of Cretaceous and Tertiary formations. At the conclusion of this excursion another of a week's duration was made on the private boat of the General Manager of the Chesapeake and Ohio Canal from Georgetown to Cumberland, which afforded to Professor Brögger and the visiting geologists an excellent section of the Piedmont and Appalachian regions of Maryland. Among those from other places who participated in these excursions were Messrs. C. D. Walcott, S. F. Emmons, Bailey Willis, J. S. Diller, C. W. Hayes and A. Keith, of the U. S. Geological Survey, and Professors B. K. Emerson, of Amherst, J. A. Holmes, of North Carolina, and F. B. Peck, of Lafayette. A camp was established during the early portion of May in eastern Allegany County, near the C. and O. Canal tunnel, in the Devonian formations. Special instruction in structural geology was given on the ground by Mr. Bailey Willis, and Dr. Reid also gave some practical instruction in map-making.

Scientific Societies. The fortnightly meetings of the Geological Society of Washington were attended from time to time during the winter by the instructors and students of the department, all of whom were elected non-resident members of that organization. Several members of the department also became members of the National Geographic Society and availed themselves of its privileges. The results of many of the most noteworthy investigations of the year are presented to these societies, and attendance at the meetings is considered an important part of the students' work.

Cooperation. Much important cooperation has been secured for the department during the past year through the courtesy of the chiefs of several of the Government Bureaus. The close affiliation also existing between several of the State Bureaus and the geological department has been of much material advantage in the conduct of the various investigations which have been under way.
The cooperation rendered by the U. S. Geological Survey, through its chief, Hon. Charles D. Walcott, and by the U. S. Weather Bureau, through its chief, Professor Willis L. Moore, has been of very material advantage to the students in geology in various ways. Professor Clark has been for several years in charge of a division of Coastal Plain work as a geologist of the U. S. Geological Survey. Mr. Bailey Willis, of the U. S. Geological Survey, is granted leave of absence yearly to give a course of lectures upon stratigraphic and structural geology. Dr. Fassig has also been designated by Professor Moore as an instructor in meteorology upon the staff of the geological department, and Professor Cleveland Abbe is granted the privilege of giving special lectures upon the principles of meteorology from time to time. Professor Moore has further appointed two of the students of the geological department as assistants in the Weather Bureau office at the University, where they have an opportunity not only of learning the methods of Weather Bureau work, but also of securing important financial aid. Dr. L. A. Bauer is also granted permission by the Superintendent of the U. S. Coast and Geodetic Survey to give a few lectures from time to time on the subject of terrestrial magnetism.

Apparatus and Collections. Several important additions were made to the apparatus and collections during the year. The library was considerably enlarged by the addition of several important serials and much-needed geological maps. Several valuable collections of rocks and fossils were also acquired.

Wm. Bullock Clare,  
Professor of Organic Geology.

The Biological Sciences.

During the past academic year the biological laboratory has been open for advanced and collegiate students, and certain courses have been attended by students in the medical school. Lectures and class-room instruction have been given as follows:

By Professor Brooks:
Advanced Zoology. For graduate students. Weekly, through the year.
(With Dr. Andrews and Dr. Johnson.) Meetings of graduate students for reports on the current literature of Zoology and Botany. Weekly.
Elementary Zoology. Twice a week, October 2 to Easter vacation.

By Dr. Andrews:
General Biology. Daily, to April 1.
Elements of Embryology. Three times a week, from April 1 to end of session.
Comparative Embryology. Daily, April 1 to end of session.
The Structure of Protoplasm. Ten lectures for graduate students.
The Biological Sciences.

By Dr. Barton: Analysis of Plants. Twice weekly, from April 1 to end of session.

By Dr. D. S. Johnson: Morphology of Plants. For graduate students. Two exercises a week, through the year.

Elective Course in Botany. For undergraduates. Two exercises a week, from October 1 to Easter.

The Major Course in Biology for Undergraduates.

The removal of the department of Physiology, with the books and apparatus, from the biological laboratory to the physiological laboratory, has rendered it necessary to reconstruct the course in Major Biology for undergraduates, which has, in the past, consisted of a half-year in Zoology and a half-year in Physiology and Histology. In place of this the course, as reorganized last year, consists of a year's work in Comparative Anatomy and Embryology in the laboratory, together with four lectures or exercises each week on Zoology, Botany, and Embryology.

Advanced Work in Zoology.

The following researches have been carried on in the laboratory during the year: The Anatomy of Nautilus; The Structure and Development of Corals; The Relation between modern types of Corals and Fossil forms; The Structure of Protoplasm; The Embryology and Morphology of Echinoderms; The Embryology and Anatomy of Planarians; The Sexual Cells of Hydroids; The Embryology of Nucula, and other primitive Lamellibranchs.

A fellowship was awarded to L. E. Griffin, who continued through the year his study of the Anatomy of Nautilus. The Adam T. Bruce Fellowship was awarded to Dr. Caswell Grave, who resigned it to engage in the economic and biological study of the oyster beds of North Carolina, under the U. S. Fish Commission. The Bruce Fellowship was awarded to L. E. Griffin, in June, to enable him to visit Jamaica, for the study of tropical forms of animal life.

Dr. Gilman H. Drew, Assistant in Zoology, has been appointed Professor of Biology in the University of Maine, and Dr. L. E. Griffin, has been appointed Assistant in Biology in Western Reserve University.

Hertwig's Embryology and the Text-Book of Zoology by Parker and Haswell were read in course in the Zoological Seminary, which met weekly, throughout the year; and reports of progress in researches in the laboratory were made to the Seminary by the graduate students and instructors.
Courses of Instruction, 1899–1900.

The degree of Doctor of Philosophy was bestowed upon J. E. Duerden, whose dissertation is upon "The Madreporarian Corals"; upon L. E. Griffin, whose dissertation is upon "Nautilus pompilius"; and upon A. M. Reese, whose dissertation is upon "The Anatomy and Histology of the Thyroid Gland of Petromyzon." Printed copies of the following dissertations have been presented to the library, in accordance with our rules: by R. P. Bigelow, on Cassiopea Xamachana; by Caswell Grave, on Ophiura squamata; by H. McE. Knowler, on Termites; by M. T. Sudler, on The Development of Penilia. The dissertations of Griffin and Reese are in press, but not yet published.

Advanced Work in Botany.

The following researches in Botany have been carried on in the laboratory and in Jamaica, during the year: The development of Peperomia; the development of Saururus; the Myxomycetes of Cold Spring Harbor; the development of the Cypress; the development of the Witch Hazel.

Dr. D. S. Johnson had charge of the instruction in Botany at the laboratory of the Brooklyn Institute, at Cold Spring Harbor, in the summer vacation, and Mr. W. C. Curtis was an instructor in Zoology, during the summer, in the marine laboratory at Wood's Holl.

The Saturday Course in Botany.

Each winter, for some ten years past, Dr. B. W. Barton, Dr. J. P. Lotsy, the late Dr. J. E. Humphrey, and other members of our staff have conducted Saturday classes, outside the University, for teachers and others who wished to study Botany.

As most of the members of the class formed last winter by Dr. D. S. Johnson were prepared for advanced work, and needed apparatus and equipment which could not be obtained outside the University, our Trustees permitted the class to make use of our laboratory, and twenty persons, most of them teachers in the schools of Baltimore, met on twenty Saturday mornings in the laboratory, and studied the lower forms of plant-life, under the direction of Dr. Barton and Dr. Johnson.

Physiology.

The courses in Animal Physiology during the year were conducted by Professor W. H. Howell, with the assistance of Dr. G. P. Dreyer, Associate in Physiology, Dr. P. M. Dawson, Assistant in Physiology, and Mr. J. C. Herrick, Fellow in Physiology. A systematic course of lectures and demonstrations was given to the medical class. This course continued throughout the year, and was accompanied by laboratory exercises held during the forenoons of October, November, and December. In the laboratory work experiments were performed by the students, under the direct
supervision of the instructors, upon muscle and nerve, circulation, respiration, and vision. A second course of lectures, demonstrations, and laboratory work was given during three afternoons of the week from January to June to a class of graduate students in the philosophical department. This course constituted the work for a subsidiary subject for the degree of Ph. D. A Journal Club, composed of the instructors and advanced students, met weekly to present and discuss current physiological literature, and a similar weekly meeting constituting the physiological seminary was held. In this latter class the subject of fermentation and enzyme action was studied, following mainly the treatment of the subject given in the work of Green upon "The Soluble Ferments and Fermentation." In June two students, Mr. J. C. Herrick and Mr. E. C. Walden, received the degree of Ph. D., with physiology as their major subject. Mr. Walden's thesis was entitled "A plethysmographic study of the vascular conditions during hypnotic sleep" and has since been published in the American Journal of Physiology, Vol. IV. Mr. Herrick's thesis was upon "The effect of passing the nerve impulse through a heated area, when studied galvanometrically"; it also will appear in the American Journal of Physiology. A research upon "The poisonous secretion of the gila monster (Heloderma suspectum)," by Messrs. Van Denburgh and Wight, was completed and published in the same journal, Vol. IV, as also an investigation by Dr. Dawson on the "Effects of venous hemorrhage and intravenous infusion in dogs." Other researches, not yet completed, were carried out upon the physiology of surgical shock, the poisonous and globulicidal action of foreign serums, the rhythmical activity of the muscles of the oesophagus, and the control of the vaso-motor system by cortical centres. At the end of the year Dr. G. P. Dreyer, who had been promoted to the position of Associate Professor of Physiology, received and accepted a call to the chair of physiology in the medical department of the University of Illinois. Dr. Dreyer has been an instructor in the physiological department since 1890 and has performed his duties in a most faithful and efficient manner. The head of the department desires to express his great appreciation of the services rendered by Dr. Dreyer. In every way he has been an enthusiastic and able assistant, and much of the success of the physiological work has been owing to his faithful cooperation. Dr. P. M. Dawson has been promoted from assistant to Instructor in Physiology, and Dr. Joseph Erlanger has been appointed Assistant in Physiology.

William K. Brooks,
Professor of Zoology.
Greek.

Under the direction of Professor Gildersleeve the advanced students of Greek have been organized into a Greek Seminary. According to the plan of the Seminary, the work of the year is concentrated on some leading author or some special department of literature. During the past year the centre of work has been Greek Historiography.

In the Seminary proper, which met twice a week during the academic year, the first month was given up to a cursory reading of the third book of Herodotus, in illustration of the lectures on the language and the historical methods of Herodotus, and the last month was occupied in like manner by a study of Polybios. During the rest of the time the work of the Seminary revolved about the criticism and interpretation of Thukydides. Special points were assigned to various members of the Seminary for development, and as auxiliary to the course the Director delivered twenty-nine lectures on Greek Historiography and gave an analysis of the critique of Dionysios of Halikarnassos on Thukydides.

Of investigations carried on by the graduate students may be mentioned: The Significance of the Deus ex Machina in the Extant Dramas of Euripides; Plato's use of Animate Nature in Illustration; The Greek Conception of the factors determining National Character; The Fables and Proverbs in Greek Literature with special reference to the Proverbs in Herodotus.

Associate Professor Miller conducted readings twice a week in Thukydides (first half of the session); a course of lectures and practical exercises in Greek Palaeography (twice a week during the second half of the session); and a series of exercises in advanced Greek Composition and Conversation for the benefit of candidates for the degree of Doctor of Philosophy (twice a week during the second half of the session).

Besides the Seminary course and the auxiliary work, Professor Gildersleeve held twenty conferences on Hermeneutics and Criticism and eighteen on recent aspects of Syntactical Study, and conducted twenty exercises in extemporaneous translation from English into Greek and Greek into English.

Undergraduate courses were conducted as follows:

By Associate Professor Spieler:

Dio Chrysostom; Gospel of St. Mark. Twice weekly, first half-year.

Thukydides, book vii. Three times weekly, first half-year.

Elegiac, Melic, and Iambic Poets; Sophokles, Ajax. Three times weekly, second half-year.

Isokrates, Panegyricus. Three times weekly, first half-year.

Lysias, vii, xxiv; Euripides, Alkestis. Three times weekly, second half-year.

Prose Composition (two classes). Weekly, through the year.
Latin.

By Associate Professor Miller:

Homer, Iliad, book vi; Herodotus, book vii. Twice weekly, through the year.

Prose Composition. Weekly, through the year.

Undergraduates have read privately for examination the following books:

Aischylus, Prometheus Vinctus. (8).
Demosthenes, Philippica. (8).
Xenophon, Hellenika, book i. (6).
Homer, Iliad, books xvi, xvii. (6).
Homer, Odyssey, books i, ix, x. (1).

B. L. Gildersleeve,
Professor of Greek.

Latin.

The organization and plan of the Latin Seminary are similar to those adopted in the department of Greek. Under the direction of Associate Professor Smith it met twice a week throughout the year, the centre of work being the Roman Satire,—more especially, the Satires of Horace and Juvenal. After the Director had given a number of lectures on these authors, the members of the Seminary presented in turn commentaries on selected portions of the first, fourth, fifth and ninth Satires of the first book of Horace, the first and fifth of the second book, and the first, third and tenth Satires of Juvenal. In addition, students prepared analyses of Horace, Satires, I, 6, 8, 10, II, 2, 6, 8, Juvenal, 4, 8, 13, and special papers on the Sulpicia Satire, Claudian’s in Rutilum and in Eutropium, Ribbeck’s theory of the “Genuine and Spurious Juvenal,” the recently discovered fragment of the sixth Satire, and Horace’s fable of the Frog and her Children.

In addition to the regular work of the Seminary, Associate Professor Smith lectured once a week throughout the year on the development and history of the Roman Satire. The course was accompanied by a rapid discussion of the fragments of Ennius, Lucilius and Varro. Once each week he met the advanced students for the purpose of reading Seneca’s Apocolocyntosis and selections from Petronius and from the Metamorphoses of Apuleius. He also conducted a Journal Club which met fortnightly to report and discuss recent work of interest in the field of Classical Philology.

Dr. H. L. Wilson lectured during the first half-year on Palaeography and for the remainder of the year on Historical Latin Grammar, once a week.

Dr. M. C. Sutphen conducted a weekly course of rapid readings in the Satires of Horace, Persius, and Juvenal.
Undergraduate courses were given as follows:

By Associate Professor Smith:
- Lucretius. *Twice a week, second half-year.*
- History of Roman Literature. *Weekly, through the year.*

By Dr. H. L. Wilson:
- Catullus; Tibullus. *Three hours weekly, first half-year.*
- Terence, Phormio; Plautus, Pseudolus. *Three times weekly, second half-year.*
- Prose Composition. *Weekly, through the year.*

By Dr. Sutphen:
- Livy, books i and xxi. *Three hours weekly, first half-year.*
- Horace, selections. *Three hours weekly, second half-year.*
- Cicero, *De Senectute*; Sallust, Catiline. *Two hours weekly, first half-year.*
- Prose Composition (two classes). *Weekly, through the year.*

Undergraduates read privately for examination the following books:
- Vergil, *Aeneid*, books ix and xii. (26).
- Propertius. (8).
- Lucan, book vii. (1).
- Quintilian, book x. (1).

Kirby Flower Smith, 
Associate Professor of Latin.

**Sanskrit and Comparative Philology.**

During the present scholastic year the advanced work in Vedic Sanskrit, under the direction of Professor Bloomfield, was carried on in two courses. First, the Vedic Seminary was engaged in the study of the Atharva-Veda. The director has recently published a history of Atharvan literature, entitled *The Atharva-Veda and the Gopatha-Brāhmaṇa*, the work forming one of the volumes of the series entitled "Encyclopedia of Indo-Aryan Research," published in Strassburg (1899).

During the spring of 1899 he was given leave of absence to prepare the way for the chromo-photographic reproduction of the unique and important manuscript of the Paippalāda-Veda of the country of Kashmir. The manuscript belongs to the University of Tübingen; it was transferred under his care to Stuttgart, the capital of the old Swabian state of Würt-
temberg; and the reproduction of the very large work (550 pages) was begun under his direction, so that he was able to bring back with him specimens of the first plates that had finally passed through the press. Professor E. W. Fay, of the University of Texas, has recently published his Johns Hopkins doctor's dissertation, 'The Rig-Veda Mantras in the Gṛhya-Sūtras.' Numerous books and papers on the science of the Vedas that have come from this Seminary are referred to in the President's Annual Reports during recent years: they bear witness to the continuous interest of these studies. During the year selections from the Atharva-Veda were interpreted critically with the aid of the very abundant materials that are now at hand for the study of this Veda.

The second advanced course was on the Upaniṣads. These texts contain the earliest statements of Hindu Pantheism, or Monism. They are the direct forerunners of the later systematic Vedānta Philosophy, the modern religion of intellectual Hindus. This philosophy has engaged gradually the interest of western thinkers from the days of Schopenhauer until the present time. Two books were read and analysed: the sixth book of the Chāndogya-Upaniṣad and parts of the fourth book of the 'Great Forest-Upaniṣad' (the Brhad-Aranyaka).

A third, and more elementary, course of Vedic study was carried on during the second half of the session. Its object was to introduce into the Vedic language, and to mark out the relation of that language to the dialect of the Classical Sanskrit. A preliminary discussion of Vedic grammar was followed by reading selected specimens of the Rig-Veda. The metres, the accent, the special phonetic, morphological, and lexical peculiarities of the Vedic language claimed the chief attention.

To the study of Classical Sanskrit were devoted four hours a week during the first semester and two during the second. The subjects were readings from the Nāla, Hitopadeśa, and Manu, including the regular beginner's course of two hours weekly during the session; the latter is the formal introduction to the study of Indian philology, as well as of the Comparative Grammar of the Indo-European languages.

The work in Comparative Philology was two-fold. First, a course of lectures during the session on General Comparative Philology. This began with a sketch of the linguistic ethnology of the Indo-European peoples, dealing with their ethical interrelations, their original geographical seat (the so-called Aryan question), and their common characteristics. Then came in brief survey sketches of India, the Vedas, Brahmansism, Buddhism; Iran, the Achemenidan inscriptions, the Zoroastrian (Avestan) religion and literature; the Indo-European peoples on the boundary line between Asia and Europe; the European peoples. This was followed by lectures and readings on the history and principles of Linguistic Science.

A course in the Comparative Grammar of the Indo-European languages dealt with the phonetics and history of the Indo-European consonants, especially as they appear in the Classical languages, Sanskrit, and the
Courses of Instruction, 1899–1900.

Teutonic languages. The next session's work along this line will engage in the study of Indo-European noun-formation.

Maurice Bloomfield,
Professor of Sanskrit and Comparative Philology.

Oriental Seminary.

Twenty-six courses in the various branches of Oriental research were given during the past year, particular attention being paid to the Old Testament, Assyriology, and Egyptology.

In the Old Testament Seminary conducted by Professor Haupt, two hours weekly through the year were devoted to the critical study of Isaiah 40–66. During the first half-year special stress was laid on critical exegesis, in the second, on minute grammatical analysis. Professor Haupt also conducted exercises in Hebrew Prose Composition, the students translating English sentences into Hebrew. Professor Johnson met a class, one hour weekly through the year, for reading at sight selected portions of the Historical Books, and the Rayner Fellow in Semitic, Dr. Grimm, conducted exercises in reading Unpointed Hebrew Texts, one hour weekly during the second half-year. The instruction in Elementary Hebrew, two hours weekly through the year, was given, under the supervision of Professor Haupt, by the Fellow in Semitic, Mr. Blake. A series of lectures on the Literature of the Old Testament, weekly through the year, was given by Professor Haupt, while Professor Johnston lectured on the History of Israel, during the first half-year.

Instruction in post-Biblical Hebrew was given by Dr. Rosenau, a class meeting weekly, during the first half-year, for the study of the Mishnah and Talmud.

Professor Haupt gave a course of weekly lectures on Comparative Semitic Syntax, with special reference to the use of the pronouns in the various Semitic languages, and Dr. Grimm lectured on Hebrew Verb Formation, one hour weekly during the first half-year.

Three hours weekly were devoted to the study of Assyriology during the first half-year, and five hours during the second term. Under the direction of Professor Haupt, the Assyrian Seminary met one hour weekly through the year for the study of the Babylonian Nimrod Epic. Professor Haupt also conducted weekly exercises in Assyrian Prose Composition, the students rendering Hebrew sentences into Cuneiform, and gave a course in Sumerian, interpreting selected bilingual texts. Two hours weekly were devoted to the study of Assyrian and Babylonian Historical Inscriptions, under the guidance of Professor Johnston, while Dr. Grimm met a class weekly, during the second half-year, for the reading of Cuneiform Syllabaries.
Oriental Seminary.

In Arabic, a weekly course of exercises in Arabic Prose Composition was conducted through the year by Professor Haupt. Professor Johnston gave courses in Elementary Arabic, weekly through the year, and in Sight-Reading of Unpointed Arabic Texts, during the first half-year, while Dr. Grimm conducted a course of Arabic Exercises during the second half-year.

Two courses in Ethiopic were given, an advanced course by Professor Haupt, weekly through the year, and an elementary course by Dr. Grimm, in the second half-year.

Instruction in Syriac was given by Professor Johnston, weekly through the year, the class reading selections from Rödiger’s Chrestomathy.

The work in Egyptology, which was begun last year, was continued during the present session, four courses being given by Professor Johnston. In Old Egyptian there were two courses, an elementary and a second year’s course.

A class for the study of Coptic met weekly through the year, and a series of lectures was given, during the second half-year, on Egyptian Literature, illustrated by facsimiles of the most famous papyri.

Three new volumes of the critical edition of the Sacred Books of the Old Testament, published under the editorial direction of Professor Haupt, were issued during the past session, viz., Isaiah, by Canon T. K. Cheyne, of Oxford; Ezekiel, by Professor C. H. Toy, of Harvard University; and Judges, by Professor G. F. Moore, of Andover. Four additional volumes, viz. Kings, by Professor B. Stade, of Giessen; Numbers, by Professor J. A. Paterson, of Edinburgh; Proverbs, by the late Professor A. Müller and Professor E. Kautzsch, of Halle; and Ezra and Nehemiah, by Professor H. Gute, of Leipzig, with Addenda by Rev. L. W. Batten, of New York, have been in type for some time, and will be issued in the course of next session.

The second part of the fourth volume of the Contributions to Assyriology and Comparative Semitic Philology, published with the cooperation of the Johns Hopkins University, and edited by Professor Haupt in conjunction with Professor Friedrich Delitzsch, of Berlin, appeared before the Easter recess. The volume contains fourteen autographed plates and some photographic reproductions of inscriptions, as well as several other illustrations, ground plans, &c., and six articles: (1) by F. H. Weissbach, of Leipzig, on the judge series of cuneiform incantations, and (2) on Susan Clay-tablets; (3) by Eugen Mittwoch, on Hebrew Inscriptions from Palmyra; (4) by Moritz Sobernheim, on Palmyrene Inscriptions; (5) by Rudolf Zehnpfund, on Paradis, the ‘scorpion’ or scarifying instrument of the Babylonians (cf. 1 Kings 12, 14); and (6) by Thomas Friedrich, of Innsbruck, on the Excavations at Zenjirli and the bit hillâni.

As delegate of the United States Government, Smithsonian Institution, United States National Museum, American Oriental Society, Oriental Club of Philadelphia, and the Johns Hopkins University, Professor Haupt attended the Twelfth International Congress of Orientalists held
at Rome in October, 1899. He presented two new volumes of the critical edition of the Sacred Books of the Old Testament and three new volumes of the Assyriologische Bibliothek; also the following papers: (a) Cherubim and Seraphim; (b) Sanitary Basis of the Mosaic Ritual; (c) Name of the Babylonian Noah; (d) Mitanian wives of Amenophis III and Amenophis IV. Abstracts of these papers are given in the Bulletins of the Congress, No. 9, p. 15; No. 13, p. 7; No. 17, p. 11; No. 18, pp. 9 and 11.

Before the Society of Biblical Literature, at its meeting in New York, December 28th and 29th, 1899, Professor Haupt read the following papers: (a) Professor Delitzsch’s New Cuneiform Chrestomathy; (b) Critical Notes on the Hebrew Text of Proverbs; (c) The Hebrew Word shulish; (d) Babylonian Elements in the Levitic Ritual, printed in Vol. XIX of the Journal of Biblical Literature.

At the meeting of the University Philological Association on February 16th, papers were presented by six members of the Oriental Seminary, as follows:—(1) Professor Haupt, The Origin of the Mosaic Ceremonial; (2) Professor Johnston, On the Relationship between Egyptian and Semitic; (3) Dr. Grimm, Double Accentuation of the Decalogue; (4) Mr. Blake, The Opening Chapter of Deutero-Isaiah; (5) Mr. Foote, The Biblical Ephod; (6) Mr. McPherson, A Modern Cuneiform Congratulatory Message. Abstracts of these papers are given in No. 145 of the Johns Hopkins University Circulars. Dr. Johnston also read a paper at the January meeting of the association on a passage of the Great Inscription of Beni-Hassan.

The following papers were read by members of the Oriental Seminary at the annual meeting of the American Oriental Society, held in Philadelphia, April 19th and 21st:—Professor Haupt, (a) The Inspection of the Intestines in the Jewish Ritual; (b) The Showbread; (c) Philippine Problems; (d) Three brief announcements: (1) Count Landberg’s Collections of Arabic Manuscripts, (2) Suggestions for Future Oriental Congresses, (3) The new volume of the Johns Hopkins Contributions to Assyriology and Comparative Semitic grammar;—Professor Johnston, A Letter of Samas-sum-ukin to his Brother Sardanapalus;—Dr. Grimm, The Use of ‘anāb ‘to answer,’ in the Old Testament;—Mr. Blake, (a) Babylonian Rites and the Atharva Veda; (b) The Poetic Form of Isaiah, Chapter XL;—Mr. Foote, Note on 2 Sam. vi.

Messrs. Adolf Guttmacher and William Rosenau presented themselves as candidates for the degree of Ph. D. The dissertation of Mr. Guttmacher was on Optimism and Pessimism in the Old and New Testaments, and Mr. Rosenau’s was devoted to an examination of Hebraisms in the Authorized Version. The principal subject of the two candidates was Hebrew, and their subordinate subjects Arabic and Philosophy.

A special Fellowship, or Research Assistantship, for Semitic was established, at the beginning of the session, by the generosity of the family of the late Mr. W. S. Rayner. Dr. K. J. Grimm, who had taken his degree
German.

at the end of the preceding session, was appointed the first Rayner Fellow in Semitic.

The library of the Oriental Seminary was enriched by the gift of a number of valuable volumes, presented by Leopold Strouse, Esq., of Baltimore.

Paul Haupt,
Professor of the Semitic Languages.

German.

The German Seminary, under the direction of Professor Wood, met three times weekly, through the year. The subject for the first half-year was Goethe's Faust. In the study of the First Part, the questions of conception and composition of the drama were considered in detail, after which the attempt was made to establish a more accurate text, on the basis of all the editions printed during Goethe's life. The first three acts of the Second Part were then interpreted, particular attention being paid to those portions which betray early origin, and are in conception more intimately connected with the First Part. During the second half-year, the Middle High German Court epic was studied comparatively, in Hartmann von Aue's Lütein, and in the Tristan und Isolde of Gottfried von Strassburg. In the case of Hartmann, his relation, in point of matter and style, to his originals was the chief subject considered. Gottfried von Strassburg's style was studied more fully, both in relation to that of Hartmann, and to the more popular elements of Middle High German poetry. During the last two months of the session, the Seminary was conducted by Professor Vos, owing to the unavoidable absence of Professor Wood in Germany.

The Germanic Society, which is composed of the Director of the Seminary and the Instructors and graduate students in German, held eight meetings during the year, in an afternoon session. Besides reviews and reports, the following papers were read, some of them presenting completed investigations, and others giving preliminary results of studies still in progress: The Text of Goethe's Faust, Part I.; Rime-parallelism in Old High German verse; The Letters of Béat Ludwig Muralt; The Preterit of haben and tuon in Gottfried von Strassburg's Tristan; The National Standpoint of the Hélland poet and of Otfred; Old German Intensive Modifiers of Adjectives and Adverbs; Declension of the Participle in Modern German (Klopstock, Herder, and Goethe).

Professor Wood gave a course in Gothic and the Elements of Comparative German grammar, twice weekly, through the year. Braune's Gotische Grammatik was studied, after which the Skeireins and parts of Ulfils were interpreted, with Bernhardt's larger edition as a basis. Kluge's Vorgeschichte der altgermanischen Dialekte (Paul's Grundriss,
second edition) was read in part, and was accompanied by practical exercises designed to illustrate the principles of sound-change and word-formation for the several Teutonic languages.

Professor Wood read, with an advanced class in Old Norse, parts of the Elder Edda. Sijmons's and Jónsson's editions were used as a basis. The songs receiving the largest share of attention were the Helgi Lieder, in connection with Bugge's latest studies were considered, and the Skírnismál. Professor Wood also conducted a course in the Beginnings of Modern German Classicism. The period in German literature from 1750 to Goethe's Italian Journey (1786) was studied. The authors to receive the chief share of attention were Wieland, Lessing, and Herder.

In the undergraduate major course, Professor Wood conducted a class, twice weekly, during the first half-year, in Goethe's Faust, the First Part of which was read. In the minor course A, he conducted weekly exercises in prose composition.

Associate Professor Vos conducted a class in Middle High German, twice weekly, during the first half-year. After a study of Phonology, Inflection, and Syntax in Paul's *Mittelhochdeutsche Grammatik*, selections were read from Henrici's *Proben der Dichtungen des Mittelalters*.

He also gave a course, twice weekly, during the first half-year, in Old High German. The grammar was rapidly reviewed at the hand of Braune's *Abriss der althochdeutschen Grammatik*. The fragments of Old High German alliterative verse were thereupon made the subject of critical study.

During the second half-year, he lectured, weekly, on Modern German Grammar. The declension of nouns constituted the main theme. The inflection and the grouping of noun-classes in Modern German were compared in detail with those of the older periods of the language, and an attempt was made to discover in each case the cause underlying the change in inflection and the shifting of noun-groups.

Dr. Vos also delivered several lectures on the History of Rime in Middle High German, during the months of February and March, the course being discontinued when he assumed charge of the Seminary in German.

The following undergraduate courses were conducted by Associate Professor Vos:

History of German Literature, Classical Period (Major Course). Scherer's *History of German Literature* was used as text-book, and illustrative extracts were read from Buschmann's *Deutsches Lesebuch II*.

In the minor course A, the following works were read in class: Baum-bach, *Erzählungen und Märchen*; Chamisso, *Peter Schlemihl*; Schiller, *Maria Stuart*; Goethe, *Hermann und Dorothea*. Gutzkow's *Zopf und Schwert* was assigned as private reading.
In the elementary course, for students in the preliminary year, Edgren and Fossler's German Grammar was used as an introduction to the language. Considerable time was also devoted to oral drill in connected discourse, on the basis of Vos's Materials for German Conversation. Heyse's L'Arrabbiata and two short German plays were also read in class.

Dr. T. S. Baker gave a graduate course, weekly, through the year, on English Influence upon German Literature in the Eighteenth Century. Lectures were given on die moralischen Wochenschriften, the translation of Paradise Lost, the relation of the German mock-epic to Pope, the relation of German nature poetry to Thomson, borrowings from English dramatic technique, and the development of das bürgerliche Schauspiel. The dependence of the German novel upon English models was also treated in detail, in connection with imitations of the works of Richardson, Fielding, and Sterne.

Dr. Baker gave undergraduate courses, as follows:

Minor Course, Class B. Four hours weekly. Otis, Elementary German (First part); Brandt, German Reader (40 pp.); von Moer, Der Bibliothekar; Goethe, Egmont; Wildenbruch, das edle Blut; E. S. Buchheim, Elementary German Prose Composition.

Elective Course. Two hours weekly. Readings in Contemporary German Literature. Ebner-Eschenbach, Erzählungen; Wildenbruch, Mein nervöser Onkel, Der Letzte; Sudermann, Die drei Reiersfedern.

Scientific German Readings. Two hours weekly. Dippold, Scientific German Reader (120 pp.); Cohn, Über Bakterien; Helmholtz, Goethe's Naturwissenschaftliche Arbeiten.

Historical Readings. Two hours weekly. Hoffmann, Historische Erzählungen; Seiler, Die Heimat der Indogermanen; Lange, Athen im Spiegel der aristophanischen Komödie.

Mr. Julius Hofmann conducted, in the major course, weekly exercises in prose composition, and classical readings in the same course during the second half-year. Schiller's Wallenstein's Lager and die Piccolomini (three acts) were read. He also met a class, weekly, for oral exercises in German. Several of Grimm's Märchen, poems of Goethe, parts of Goethe's Faust and of Schiller's Glocke were studied, recited, and commented on. Synonyms of words new to the class received special attention.

Henry Wood,
Professor of German.
English.

1. Advanced Courses.

Professor Bright conducted the English Seminary, which met twice a week (four hours) throughout the year. In the first half-year Milton's *Paradise Lost* and *Paradise Regained* were critically read and interpreted; in the second half-year the *Beowulf* was studied. Special attention was given to the laws of epic composition, and in the case of the *Beowulf* all the episodes were studied in their relation to myth and history, and the theories concerning the composition of the poem were reviewed.

Professor Bright conducted a class in the critical and comparative study of *The Lay of Havelok the Dane*.

During the first half-year he lectured on special topics in Anglo-Saxon Grammar, and during the second half-year he lectured and conducted conferences on Modern English Grammar.

The members of the English Seminary were met by Professor Bright as a Journal Club (fortnightly, two hours) for reports on the current periodicals (linguistic and literary), for reviews of new books, and for the reading and discussion of original papers.

Professor Wm. Hand Browne delivered two courses of lectures (weekly, throughout the year). One was on the literary history of the English Bible, starting with the Vulgate, and successively examining the Anglo-Saxon partial versions (Elfric's and the West-Saxon Gospels), Rolle's Psalter and the Wycliff Bible with the Lollard movement, Tyndale's and Coverdale's versions, and other Bibles of Henry VIII's reign, the Geneva Bible, the Bishops' Bible, the Douai Bible of 1609, and the Authorized Version of King James. These versions were, as far as possible, co-ordinated with the intellectual and literary movements of which they formed parts.

The second course treated the Scottish Poetry from Lydias to Burns, tracing the decadence of the old literary school, the survival of light vernacular poetry, the Anglo-Scottish poets, and the revival of the eighteenth century.

2. College Courses.

The English major class met Dr. Henry S. West, twice a week, through the year, for the study of Anglo-Saxon, using as a text-book Bright's *Anglo-Saxon Reader*.

This class also met Professor Browne twice a week. One hour weekly was given to the study of the Scottish Poets from Barbour to Lyndsay; and one hour weekly to (1) the Elizabethan literature, (2) the literature of the first-half of the nineteenth century.

The English minor class was conducted by Professor Browne. The class studied Early and Middle English texts (two hours a week), using Morris
and Skeat's Specimens as the text-book, and English literature (two hours a week), using Arnold's Manual of English Literature.

A class in Rhetoric met three times weekly, throughout the year. During the month of October this class was conducted by Professor Greene. Early in November the class was divided, upon the basis of rank, into two sections; the second section was instructed by Dr. West. Theory was imparted by means of text-book (A. S. Hill's Principles of Rhetoric), lectures, and discussions; practice was obtained by the writing of about fifty short papers, of which a few from each set were read and criticised in the class-room, and by the writing of longer papers, which were read and criticised privately with the writers. The weekly practice in writing was combined with an examination of the usage of standard writers. Each member of Section A made a careful study of the style of one prose author (usually of a nineteenth century author), and presented the results of his study in a series of short papers. The class-work included a study of representative passages of description and narration (Baldwin's Specimens of Prose Description; Brewster's Specimens of Narration). The members of Section B made a careful study of specimens of standard prose, as contained in Brewster's Studies in Structure and Style, and presented a series of short papers containing the results of their study.

A class in English Literature met Professor Greene three times weekly, throughout the year. This class made a general survey of English Literature from the beginning to the first quarter of the seventeenth century. A detailed study was made of the works of Chaucer, Spenser, and Shakespeare. Of the writings of these poets, a considerable amount was critically studied in the class-room; and much more was read by the members of the class in their private reading. Each member of the class prepared two essays. In addition to the regular class-room exercises, five readings from the poems of Chaucer and twelve lectures upon the dramas of Shakespeare were given for the benefit of those members of the class who desired to attend them.

An elective course in English Literature was given by Professor Greene, twice weekly, throughout the year. During the first half-year the study was centered upon the works of Dryden, Steele, Addison, Swift, and Pope; during the second half-year, upon the works of Wordsworth, Coleridge, Keats, Shelley, and Byron. In connection with the weekly lectures and discussions the members of the class did a large amount of private reading. In addition to shorter papers, each member of the class prepared and read before the class an essay upon one of the principal writers studied.

3. Public Lectures on Literature.

The Reverend Canon H. D. Rawnsley, of Keswick, England, gave a lecture, October 25, 1899, on "The Lake Country."
Courses of Instruction, 1899-1900.

Professor C. T. Winchester, of Wesleyan University, Conn., gave a course of six lectures on the Donovan foundation. The general subject of these lectures was "Essayists and Reviewers of the beginning of the Nineteenth Century." These lectures were given March 28 to April 6, 1900, in the following order: (1) "Introductory—The Reviews"; (2) "Hazlitt"; (3) "Lamb"; (4) "Wilson"; (5) "De Quincey"; (6) "Leigh Hunt".

Professor Hugh Walker, of St. David's College, Lampeter, South Wales, delivered a lecture in the Donovan Room, April 6, 1900, on "The contrary influences of Rationalism and the Catholic Revival on Victorian Literature".

The eighth course of the Percy Turnbull Memorial Lectures on Poetry was given, April 23 to May 4, 1900, by Professor Charles H. Herford, Litt. D., of the University College of Wales. "Nature and Romance in English Poetry" was discussed in eight lectures: (1) "The Germanic Core of English Poetry"; (2) "The Age of Chaucer"; (3) "The Renascence"; (4) "The Elizabethans"; (5) "The Seventeenth Century"; (6) and (7) "The Return to Nature and the Revival of Romance: i. From Pope to Blake, ii. From Wordsworth to Tennyson"; (8) "The Permanent Power of English Poetry".

JAMES W. BRIGHT,
Professor of English Philology.
WILLIAM HAM BROWNE,
Professor of English Literature.
HERBERT EVELINH GREENE,
Collegiate Professor of English.

Romance Languages.

I. Graduate Courses:

Professor Elliott conducted advanced courses as follows:

Romance Seminary. Two hours a week, through the year.

The work centered here on the Fables of Marie de France, of which it is proposed eventually to issue a critical edition based on the original manuscripts. The object of the course has been to acquire a working knowledge of the fable literature of antiquity and the middle ages; to become acquainted with the characteristics of the Norman and Anglo-Norman dialects in which some of the more important manuscripts are written; to present the fundamental principles of text-criticism and text-constitution, for which three fables were examined. These were based on six English, fifteen French, one Belgian and one Italian manuscript. A clear view of the morphology and phonetics of the language was obtained as contrasted with those of the Isle-de-France. In addition to this, much new material bearing on the
history of medieval fable literature was also presented. Professor Elliot directed the text-constitution and criticism in this work, while the comparative study of the selected fables was undertaken by the members of the Seminary under the supervision of Dr. Keidel, and reports were presented which embodied the chief results of the special investigations made by each student.

The object here was to give the student an introduction to the phonetics and morphology of Folk and Low-Latin as the common basis for a scientific study of the modern Romance idioms. Meyer-Lübke's treatment of the subject in Grüber's Grundriss der romanischen Philologie was taken as the starting-point for this work, in connection with which lectures were given, contrasting the popular forms with the historic development of the classical forms. The material of the Probi Appendix was worked out on the basis of Schuchardt's Vocalismus des Vulgärlateins. Budensky's Ausbreitung der Lateinischen Sprache, D'Arbois de Jubainville's Déclemation latine en Gaul, Bonnet's Le Latin de Grégoire de Tours, Wölflin's Archiv für lateinische Lexicographie, and Seelmann's Aussprache des Latein were constantly used in connection with this course.

Romance Club. Weekly.
The object of this organization, to which all members of the Romance Language department belong, is to foster a common interest in everything that concerns the study of the Romance idioms. Reviews of important journal articles, papers on original investigations, discussions of literary and scientific subjects, reports of correspondence of a professional nature, represent the chief exercises that claim the attention of the club.

French Dialects. Weekly.
The dialects especially considered were the Norman, Picard and Walloonian. The method of work was, to a great extent, practical, and had in view a sufficient acquaintance with dialect forms to enable the student to discriminate Old-French texts belonging to these different idioms. To this end the leading characteristics of the old and the modern dialects were presented in a few lectures; then, through the use of early and later texts, the student was required to recognize and name the dialect features as they occurred.

Lectures on Dante. Weekly, second half-year.
The object of this course was to give the student a survey of the Dante science of to-day. In a few introductory lectures he was made acquainted with the leading philosophical and literary tendencies of Dante's time, the Inferno and Purgatorio ideas before the author's epoch. The Purgatorio and Paradiso were analysed and presented in detail, both with reference to the previously existing ideas of punishment and recompense and to those peculiar to Dante.
A brief view of general principles and of existing phonetic schools was followed by a description of the organs of speech and a detailed examination of the mode of formation of French sounds. Practical exercises.

Professor F. M. Warren, of Adelbert College, gave courses as follows:
Twenty lectures on the history and works of the French Breton cycle. The allusions to Arthur in Latin chronicles and Wace’s translation of Geoffrey of Monmouth’s Historia Britonum were reviewed. The characteristics of the French lais of Breton origin were pointed out with opinions as to the traditions or mythology they present. The poems on Tristan and Yseult and the works of Chrétien de Troyes were studied in detail. Attention was called to the possible sources of the French writer, and to the way the material was treated by them. References to mediaeval life and manners and features of literary style were noted.

Four lectures on the mediaeval drama of France, especially the liturgical theater, from its use in the church service through its development in the Latin tongue to its transcription into the vernacular. Its principal works were mentioned as illustrations. The different kinds of mediaeval comedy were also treated with their contribution to literature.

Eight public lectures on modern French drama from Corneille to the present time. The object of this course was to show how the classical stage became established in France and how it was gradually modified by successive reforms, particularly Voltaire’s, Diderot’s, and the Romanticists’. Attention was called to Shakspeare’s influence, to the revival of Diderot’s conceptions by A. Dumas père, to the formulas laid down by Scribe, and to the changes in setting and acting effected by the Naturalists and Ibsen.

Associate Professor Marden conducted the following courses:
Spanish Seminary. Weekly.
The work of the Seminary consisted of a linguistic study of the Poema de Fernan Gonzalez. The basis for the work was a facsimile copy of the Escurial manuscript, several unpublished fragments in prose and verse, and the printed editions of both the Poema and the old Spanish Chronicles. Subjects in connection with the phonology, morphology, syntax and versification of the poem were assigned to the various members of the Seminary, who embodied the results of their investigations in weekly reports. Finally, the students made practical application of their knowledge by constructing a critical text for sixty verses of the poem.

Spanish Philology. Twice weekly.
The students used Gorra, Lingua e Letteratura Spagnuola delle Origini, and Baist, Die Spanische Sprache, in connection with a course of lectures on Spanish phonology and morphology. Every fourth meeting was a quiz, during which the class was given an opportunity to apply the laws deduced in the lectures.

The aim of the course was to give the students a reading knowledge of Spanish of the twelfth, thirteenth and fourteenth centuries. After mastering the selections in Gorra's chrestomathy, the class read Morel-Fatio, _Textes castillans inédits du XIIIe siècle_, and Lidforse, _Los Cantares del Myo Cod._


The first two lectures were devoted to a survey of the bibliography of the Spanish drama. The standard works on Spanish literature, as well as the treatises on the Spanish drama, were exhibited in the lecture room, and the special features of each book or collection were emphasized, in order that the student might have a definite guide in all subsequent work in Spanish literature. The early Church drama was discussed in detail, and it was shown how the blending of the popular element with the church service produced a purely secular drama. The lectures then traced the history of the _épïoga_ under Encina, Vicente, etc., and the later development of a popular dramatic representation under Lope de Rueda and his followers.

Dr. Armstrong conducted the following courses:

Phonology and Morphology of Old French. *Three hours weekly.*

In this course there was given a detailed view of Old French vowels, consonants, and flexion, with especial reference to the historical connection on the one hand with Folk Latin and on the other with Modern French. Attention was directed chiefly to the language of Central France, other dialects being considered only for purposes of comparison. Two hours each week were given to lectures; a third was employed in the application of the principles already treated to a portion of the text of the _Chanson de Roland_, and in discussion by the instructor and students of obscure or difficult points.

Old French Readings: Course B. *Weekly.*

In this course especial attention was paid to the differences in form and construction between Old and Modern French. Completion of this course, or its equivalent, is a condition of admission to Course A (see below). The following works were read: Paris, _Extrait de la Chanson de Roland_; the selections from Joinville and Villehardouin in Paris and Jeanroy's _Extrait des Chroniques françaises_; the Strassburg Oaths; _Cantilène de Sainte Eulalie_; _Vie de Saint Alexis_; _Aucassin et Nicolette_; Marie de France, _Lais._


Some facility in reading and a familiarity with the different types of poetic composition in Old Provençal were sought. To this end some of the most difficult as well as some of the simpler texts were chosen. The books used were Appel's _Provençalische Chrestomathie_ and Stimming's _Provençalische Literatur_ in Grüeber's _Grundriss der romanischen Philologie._
Dr. Ogden conducted the following course:
Lectures on the "Rise and Development of Lyric Expression in French Verse." Weekly.

The object of the course was to characterize the lyric French spirit, and examine the various forms under which it has found voice, noting as well the appliance of any foreign material that was directed to this end. Some time was given to the earliest appearance of the lyric and the sources of its inspiration. The various modifications of the genre were traced to the Renaissance, with ample illustration, and the changes introduced with the school of Ronsard. The reforms of Malherbe were also discussed to further an understanding of the classic standard. The eighteenth century, as a period of gestation, was considered in its relation to the florescence of the period following, of which certain conspicuous and characteristic lyric features were commented on and studied in their connection with preceding causes. The aim was not to study French poetry, but to appreciate the moulding spirit which lies behind its expression.

Dr. Brush conducted the following course:
Old French Readings: Course A. Two hours weekly.

The aim of this course, given this year for the first time, was more thoroughly to familiarize advanced students in Old French with specific forms of the early literature. The subjects chosen for the year's work were designed to be coordinate with the lectures of the year on Old French literature. In the first semester the Arthurian Cycle was studied, and the texts read were as follows: Chrétien de Troyes: Erec u. Enide, ed. by Foerster; Raoul de Houdenc: Merangis von Forleus, ed. by Friedwagner; Li Chevaliers as Deus Espés, ed. by Foerster. During the second semester the class-work was on the Early French Lyrics, and those were read which are found in Bartsch's Romanzen u. Pastourellen. In addition to these shorter poems the class read the pastoral drama by Adam de la Hale, Robins et Marion.

Dr. Keidel conducted the following courses:
Romance Methodology. Weekly, first half-year.

The general principles of library research, proof-reading, thesis-writing, and bibliography were explained and fully illustrated by numerous concrete cases of actual personal experience.

Romance Palaeography. Weekly, second half-year.

A short and succinct account was given of the various schools of writing developed on Romance territory during the middle ages, followed by practical exercises in the deciphering of facsimiles of Old-French manuscripts. This course was intended to fit students for the real work of copying mediæval manuscripts in the great European libraries.
II. Undergraduate Courses.

Dr. Armstrong conducted the following course:

French : Minor A. Four hours weekly.
Facility and accuracy in reading French is a prominent aim in this course, but at the same time an effort is made to familiarize the student with the leading facts in the last three centuries of French literature and to give him an intelligent appreciation of the qualities of the works read. Accurate translation into smooth English is stressed in the class, alternated with reading without translation, frequent questions on the subject-matter being interposed. The elements of pronunciation are explained on a phonetic basis and are impressed by frequent practice. A foundation for the use of spoken French is furnished by alternating it with English as the language of the class-room, by frequent short talks in French from the instructor, and oral reports by the students on the books read. Attention is paid to making the course useful as a mental discipline through accurate translation into English, drill in syntax, and weekly translations into French. Three French essays on private reading are required in the year. The texts read were Corneille, Le Cid, Molière, L'Avare, Hugo, Hernani, Mérimée, Colomba, Labiche and Martin, Noé, Angier and Sandeau, Le Gendre de M. Poirier, Rostand, Cyrano de Bergerac, Malot, Sans Famille, Taine, Les Origines de la France contemporaine, (German and French) Poems for Memorisation (Holt, pubr.). Duval's Petite Histoire de la Littérature française, Devier's Grammar, and Grandgent's Exercises based on Peppino were also used.

Dr. Ogden conducted the following courses:

French : Minor B. Four hours weekly.
The aim of this course, above all, is to prepare the student for an intelligent reading at sight, and is largely attended by candidates for the Doctor's degree, who have this object in view. Comparatively little time is given to grammatical drill, but, as soon as practicable, the class is required to read easy prose. From this matter is drawn all needed illustration of points of grammar. The first term of the past college year was devoted to acquiring a fundamental knowledge of the language, with easy reading. The remainder of the time was given to a rapid study of French prose, which was selected so as to increase in difficulty as proficiency was attained. Translation at sight was also considered important.
The ground covered was: L'Abbé Constantin, by L. Halévy; Le Gendre de M. Poirier, by Angier and Sandeau; Le Monde où l'on s'ennuie, by E. Pailleron; Le Merle Blanc, by A. de Musset.

French: Elective. Twice weekly.
Fontaine, Histoire Modernes; F. F. Crane, Le Romantian Francais; V. Hugo, Notre Dame de Paris.
Italian: Elective. Twice weekly.

The instruction was devoted chiefly to imparting a reading knowledge of Italian. Grandgent's *Italian Grammar* was used to gain the necessary foundation of construction. The literature read was as follows: Selections by Bowen; G. del Testa, *L'Oro e l'Orpello*; De Amicis, *Il Romano d'un Maestro*; Dante, *Inferno* (Clarendon Press ed.).

Dr. Brush conducted the following courses:

French: Major Course. Four hours weekly.

This course was divided into two parts, three hours a week being given to the study of literature, and one hour to the study of advanced French composition. The work in literature covered two periods and was supplemented by general lectures on the history of French literature and by four lectures on the Private Life of France in the Seventeenth Century. In the latter series the subjects treated were the Bourgeois, the University Student, the Courtier, and General Social Conditions in the Seventeenth Century. During the first term, the period studied was that of the Classic Drama in the Seventeenth Century, and the following texts were read: Molière, *Le Bourgeois Gentilhomme*, ed. by Warren, *Le Tartuffe*, ed. by Gasc, and *Le Misanthrope*, ed. by Eggert; Cornelle, *Polyeucte*, ed. by Fortier; Racine, *Andromaque*, ed. by Wells. During the second and third terms the subject was Nineteenth Century Literature, and the following works were read: Balzac, *Le Curé de Tours*, *El Verduo*, *Les Prosorits*, and *La Messe de l'Âthée*, ed. by Warren; Hugo, *Ruy Blas*, ed. by Garnier, *La Chute*, ed. by Huss; De Musset, *On ne badine pas avec l'Amour et Fantasio*, ed. by Pollock; Zola, *La Débâcle*, ed. by Wells; Daudet, *Lettres de Mon Moulin*; Canfield's *French Lyrics*. The class also read, during the second term, Sainte-Beuve, *Sept Caiseries de Lundi*, ed. by Harper.

French: Elementary Course. Three hours weekly.

The work in this course was designed to ground the students in the principles of French grammar and pronunciation by the study of grammatical rules, by the translation of English sentences into French, and by reading easy French texts. The following text-books were used: Grandgent's *French Grammar* with *Exercises for the First Year in Colleges*; Verne, *L'Expédition de la Jeune-Hardie*, ed. by Logie; Kuhn's *French Reader*; Labiche and Martin, *Le Voyage de M. Perrichon*, ed. by Scheele de Vere; Dumas, *Les Trois Mousquetaires*, ed. by Sumichrast; Augier and Sandeau, *Le Gendre de M. Poirier*, ed. by Wells.

Italian: Minor Course. Four hours weekly.

The aim of this course is to give the students a good reading knowledge of the language, together with some ability to express themselves in it. This object was sought after by a thorough study of the elements of grammar, supplemented by exercises in composition and by the writing in Italian of ordinary business letters. In addition to the grammatical study, various works in the language were read in order to give the students a
full vocabulary and to familiarize them with the masterpieces of Italian literature. The texts used were the following: Grandgent's *Italian Grammar and Composition*, entire; Bowen's *Italian Reader*; Capuana, *Homo*; Fogazzaro, *Danièle Cortis*; Goldoni, *Il Barbero Benefico* and *Un Curioso Accidente*; Alfieri, *Oreste*; Maffei, *Merope*; Ariosto, *L'Orlando Furioso*, Cantos I, VII, XIX, XXVII, and XXXIV; Petrarch, selected sonnets; Dante, *L'Inferno*. As additional aids to the study of the literature, the class read Garnett's *Italian Literature* and Symonds' *Introduction to the Study of Dante*.

Associate Professor Marden conducted the following courses:

**Spanish:** Minor Course. *Four hours weekly.*

After a few lessons in Manning's *Spanish Grammar*, reading was begun in Matzke's *Spanish Reader* and continued to Christmas. The class then read Alarcón, *El Capitán Veneno*; Tamayo y Baus, *Un Drama Nuevo*; and fifty pages of Galdós, *Doña Perfecta*. Exercises in grammar and prose composition were continued throughout the first term. During the second term one meeting each week was devoted to the History of Spanish Literature, and the student prepared selected chapters from Giner de los Ríos, *Literatura Española*.

**Spanish:** Elective. *Two hours weekly.*

As soon as the students had mastered a few important facts in Edgren's *Spanish Grammar*, the class began reading selections from Matzke's *Spanish Reader*. This was followed by Morstin, *El Sé de las Niñas*, and about twenty-five pages of Palacio Valdés, *José*.

### III.—COMMERCIAL COURSES IN SPANISH.

Mr. Gould conducted two special courses in Spanish. The classes were composed of students of the University and of persons not connected with the University, who desired to gain a practical knowledge of Spanish for commercial purposes. The courses were as follows:

**Spanish Conversation. Two hours weekly.**

This course was intended to give a practical speaking knowledge of the language, and the subjects assigned for discussion bore directly upon trade and commerce. The text book was Ybarra's *Practical Method in Spanish*.

**Commercial Spanish. Two hours weekly.**

This course aimed to teach the reading and writing of Spanish bearing directly on commercial life. The class used Manning's *Spanish Grammar*, which was supplemented by special vocabularies furnished by the instructor. The reading was confined to selected passages from Spanish newspapers.

**A. MARSHALL ELLIOTT,**

Professor of Romance Languages.
History, Politics, and Economics.

The work of this department has continued under the general direction of Professor Herbert B. Adams. His immediate colleagues are: Associate Professors J. M. Vincent, in History, Sidney Sherwood, in Economics, W. W. Willoughby, in Politics, J. H. Hollander, in Finance; Associates B. C. Steiner, in American History, J. C. Ballagh, in Classical History. Dr. G. C. Lee is Instructor in History, Public Speaking, and Debate. Special courses of lectures have been given also by Dr. Jeffrey R. Brackett, Dr. J. M. Callahan, Dr. James Schouler, of Boston, and Dr. E. D. Durand, of Leland Stanford Jr. University.

The regular publications of the department, the studies in Historical and Political Science, completed the Seventeenth Series. This included: I-III, History of State Banking in Maryland, by A. C. Bryan; IV-V, History of the Know-Nothing Party in Maryland, by L. F. Schmeckebier; VI, The Labadist Colony in Maryland, by B. E. James; VII-VIII, History of Slavery in North Carolina, by J. S. Basset; IX-X-XI, Early Development of the Chesapeake and Ohio Canal Project, by G. W. Ward; XII, Public Educational Work in Baltimore, by H. B. Adams. This series is entitled "Economic History—Maryland and the South," and makes a volume of 600 pages.


In addition to the regular series there was published a separate volume on The Diplomatic Relations of the United States and Spanish America, by Dr. John H. Latané. This bears the sub-title "The Albert Shaw Lectures on Diplomatic History for 1899," and its duodecimo form indicates that it is distinct from the previous Extra Volumes of the Studies. It is hoped that an additional series may be continued from this beginning.

Among the articles and books published by members of the department, the following may be noted in this connection: H. B. Adams: (1) Summer Schools and University Extension (No. 16 of "Monographs on Education in the United States," edited by Nicholas Murray Butler and contributed to the United States exhibit at Paris by the State of New York, 1900); (2) University Extension in Great Britain (contributed to the Report of the Commissioner of Education for 1899); (3) Public Libraries and Popular Education (State Library Bulletin of the University of the State of New

During the year this department was called upon to lend one of its members to the public service of the United States. Dr. J. H. Hollander was appointed Special Commissioner to Porto Rico to introduce a system of taxation. Soon after he entered upon his duties, Congress adopted a new system of government for the island and he was made Treasurer of Porto Rico.

The Historical and Political Science Association was attended by twenty-one students and eight instructors and met fortnightly through the year in the Bluntschli Library. This Association constitutes a general clearing-house for the more important original work of the whole department. Here also the current literature of history, economics, and political science is subjected to review and criticism. The proceedings from October 6, 1899, to February 16, 1900, are published in the University Circulars for March, 1900. Among the original papers presented by students or instructors were the following: Municipal History of Cleveland, Ohio, by C. Snaively; The Archives of the United States, by J. M. Callahan; The Social Condition of the Southern Slave, by J. C. Ballagh; Recent Banking Legislation in Germany, by S. Sherwood; Legal Status of the Slave in Virginia, by J. C. Ballagh; Internal Improvements in North Carolina, by C. C. Weaver; Thomas Holliday Hicks, Governor of Maryland, by G. L. F. Radcliffe; Maryland Constitutional Convention of 1865, by W. S. Myers; Slave Insurrections in the South, by W. S. Drewy.

From time to time gentlemen not connected with this University were invited to address the Association upon questions to which they had given special attention. Mr. J. G. Whiteley of Baltimore, spoke upon England and the Transvaal in International Law; and again upon the International
Courses of Instruction, 1899–1900.

Congress of Diplomatic History. Mr. George R. Gaither, Jr., of Baltimore, gave his impressions of the Trust Conference in Chicago, September, 1899. This was followed by a critical review of the printed reports of the conference by members of the Association. Mr. P. W. Holls, of New York, presented, with comments, an analysis of the agreement made at the International Peace Conference at the Hague. Professor Simon N. Patten, of the University of Pennsylvania, spoke upon The Economic Interpretation of History. Dr. Walter F. Willcox, of Cornell University, at present connected with the United States Census Bureau, explained the Organization and Methods of the Twelfth Census. Mr. J. A. Duverden, Curator of the Jamaica Institute, graduate student in the biological department, gave an address on Aboriginal Jamaica, illustrated with stereopticon views.

Professor Herbert B. Adams organized the following courses of instruction and personally conducted them through the month of October, 1899:

1. Historical Seminary, with twenty-one graduate students.
2. Early History of Institutions, with twenty graduate students, two hours weekly.
3. Educational Conference, with eighteen graduates, one hour weekly.
4. History of Civilization in the Far East, with twenty-five undergraduates and two graduates, two hours weekly.

During Dr. Adams's illness and absence in Jamaica, Dr. J. M. Vincent was in charge of the department and provided for Dr. Adams's classes with the aid of Dr. J. M. Callahan and Dr. J. C. Ballagh. In March, 1900, Dr. Adams returned to the department and resumed his administrative and editorial duties. His class work remained in the above hands.

Associate Professor John Martin Vincent has conducted the following courses:

1. The Reformation, with nineteen graduate students, two hours weekly, through the first-half year. Beginning with the departure of Luther from the Roman Church the lectures conducted the students from the causes of the Reformation to the period of the Catholic Reaction. Emphasis was laid particularly upon the economic conditions existing in Germany during that period, indicating the steady dissolution of the feudal system and the gradual rise of modern agricultural and commercial methods. Care was taken also to point out the changes in political theory which appear about this time.

2. The Puritan Revolution, with nineteen graduate students, two hours weekly, during the second half-year. A similar method of treatment was employed for this portion of English history. The development of political ideas was made particularly noticeable, and the origins of these ideas were sought in the writings of certain of the great reformers. The rise of the Separatists sects was also dwelt upon and the connection shown between their political and their religious theories. These two courses are looked upon as introductions to American colonial history.
citizens of Baltimore. The second was given February 3 before the Historical and Political Science Association and was attended by members of the Historical Seminary and by numerous visitors from other institutions in Baltimore. This lecture was given under most interesting circumstances, because the Historical Seminary is the depository of the books and manuscripts of three great international lawyers, Bluntschli, Lieber, and Laboulaye.

The Albert Shaw Lectures on Diplomatic History were continued by Dr. J. M. Callahan, whose topic was the Diplomatic History of the Southern Confederacy. The foundation of this lectureship was noted in the report for 1899.

Dr. Callahan also gave a course of twelve lectures on America in the Pacific and another course of the same number upon the Territorial Policy of the United States. These courses were all attended by graduate students.

Dr. Guy Carleton Lee has conducted a course in English Political and Constitutional History (two hours weekly), which has been followed by three graduates and twenty-one undergraduates; a course in the History of English Law (one hour weekly), followed by fourteen graduate students; a course introductory to the study of Law (one hour weekly), followed by eighteen students.

Dr. Lee has continued instruction in Public Speaking: (1) A course in Parliamentary Practice and Debate (one hour bi-weekly), alternating with a conference on the same subjects: this has been followed by forty-seven seniors; (2) a course in Parliamentary Law and Debate (one hour bi-weekly), alternating with a conference on the same subject: this has been followed by fifty-one men of the second year; (3) three courses (one hour each) in the Elements of Public Speaking: these courses have been attended by fifty-four undergraduates, principally men of the first year; (4) a course on Public Lecturing (one hour weekly, first half-year), followed by ten graduates.

ECONOMICS.

1. The newest feature of the economic work was the inauguration of a series of studies on the Commerce and Commercial Policy of the United States. This work was organized in the Economic Seminary, a branch of the Historical and Political Science Association, conducted by Associate Professor Sherwood, aided by Associate Professor Hollander. This special work was undertaken with vigor and the following papers were prepared and read before the Seminary: “Influence of Lloyds’ on American Shipping,” by F. C. Fisher; “The American Consular Service,” by Edgeworth Smith; “Trade of the United States with South America,” by H. S. Hanna; “American Trade with China,” by B. Kilby; and “The Fiscal Significance of the Protective Tariff,” by G. Cator. The following papers
Courses of Instruction, 1899–1900.

on other topics were also read before the Seminary: "The New German Bank Law," by Dr. Sherwood [Quarterly Journal of Economics, February, 1900]; "Influence of the Trust in the Development of Undertaking Genius," by Dr. Sherwood [Yale Review, February, 1900, Pub. of American Economic Association, February, 1900]; "History of Banking in Mississippi," by Professor C. H. Brough, of Mississippi College; "Insolvency in National and State Banks," by G. E. Barnett; "State Banking in the United States since the National Bank Act," by G. E. Barnett; "The Flour Trade of Baltimore," by G. Cator. Articles in the current economic journals and several new economic books were also reviewed. The Seminary met two hours fortnightly and was attended by seven graduate students. Mr. G. E. Barnett, Fellow in Economics—after Dr. Hollander's departure to Porto Rico, Assistant in Economics,—rendered important aid in the organization of the work.

Associate Professor Sherwood also conducted the following courses for graduates:

2. Principles of Economics. This course occupied one hour weekly through the year and was attended by nine students. The principles of pure economics were formulated from the standpoint of the most recent studies. Emphasis was laid upon the individualistic basis of industrial organization, and economic processes were traced from their starting point in the wants of individuals through the complex forms of modern society. The modifications of the competitive principle due to monopolistic tendencies received special attention.

3. Commerce, two hours weekly, during the first half-year, with eleven students. Analysis was made of the economic significance of commerce, and commercial institutions and organization were described in detail. The relations of commerce to the state were discussed at length and an outline of commercial policy was indicated.

4. Transportation, a course occupying two hours weekly, during the second half-year, attended by eleven students. After the general improvements in methods of transportation during the last two centuries had been traced, detailed attention was given to the growth of railroads in this country and to the rise of the railroad problem. The work of the Interstate Commerce Commission was reviewed, the question of railroad rates was discussed, and particular attention was given to the problem of government regulation.

Associate Professor J. H. Hollander conducted the following graduate courses:

1. English Economic Thought before Adam Smith. Two hours weekly, during the first half-year, with nine students. The important economic writers of the sixteenth, seventeenth, and eighteenth centuries were discussed and attention was paid to contemporary economic conditions. Class reports were presented upon the economic contributions of Berkeley, Maundeville, Barbon, Hobbs, North, Gee, Tucker, Defoe, and Law.
History, Politics, and Economics.

2. Municipal Finance. This course, attended by nine students, was designed to occupy two hours weekly, during the second half-year. The work was only fairly begun, however, when Dr. Hollander was called to Porto Rico, and Dr. Durand's course, described below, was substituted.

Taxation. Dr. E. Dana Durand, Assistant Professor of Administration and Finance in Leland Stanford Junior University, gave a course of twenty lectures on Taxation during the second semester, which was attended by eight graduate students.

The general characteristics and principles of taxation were first considered, with special attention to the theory of the apportionment of taxes. The leading kinds of taxes were then taken up in order, some discussion being given to their history and present use in the United States and other countries, but chief stress being laid upon the principles underlying them and upon their relative advantages and disadvantages. The students have participated in discussions as to controversial questions, and each of them has presented a paper on some phase of taxation. Adams's Science of Finance and Seligman's Essays in Taxation have been largely used as collateral reading, while other authorities have also been consulted from time to time.

The following undergraduate classes were conducted by Drs. Sherwood and Hollander, aided in the second half-year by Mr. G. E. Barnett:

1. Elements of Economics. A two-hour course, attended by forty-six students. The subjects treated were the elementary principles of economics in the first-half year, and Money and Banking in the second-half. This course is a part of "Minor Economics" and also of "History-Economics."

2. History of Economics; International Trade. Two hours weekly, attended by fourteen students. The nature of the work is indicated by the title. The course constituted the second-half of "Minor Economics."

3. Advanced Economics. An elective class, composed of seven undergraduate and five graduate students, met two hours weekly throughout the year. Attention was given to recent tendencies in industrial life and to current economic theories. The text-books used were Hobson's Evolution of Capitalism and Marshall's Principles of Economics.

Politics.

Associate Professor W. W. Willoughby has conducted the following courses for graduates:

1. Theories of Social Justice, with thirteen students, two hours weekly, during the first half-year. In these lectures were considered the abstract ethical considerations involved in the right of private property and its distribution, the justification of political and social control, the canons of primitive justice, the application of the competitive principle in human societies, etc.

2. History of Ancient and Early Medieval Political Philosophy, with thirteen students, two hours weekly, during the second half-year. The
political ideas and ideals of these times were analyzed and criticised. An especial effort was made to show the extent to which these theories were the outcome of the political conditions and general characteristics of the times in which they were formulated.

3. Comparative Constitutional Law, with nine students, two hours weekly, throughout the year. This course was intended as an introduction to the study of American Constitutional Law. For this reason the chief attention was directed to the study of composite forms of state life. This involved a consideration of the nature of such political types as protectorates, colonies, tributary states, real and personal unions, confederacies, administrative unions, and federations. The public laws of Switzerland, Germany, Austria, Hungary, Canada, and the South and Central American federations were then examined, and the question of the nature of our own union entered upon.

4. Political Conference, two hours fortnightly, throughout the year, with six students. Important works dealing with the colonization of Africa and Asia by foreign nations were reviewed, and written papers upon selected topics read and discussed.

Social Science.

Dr. Jeffrey R. Brackett conducted a course of ten lectures on Public Aid, Charity, and Correction on Monday afternoons beginning November 13, 1899. The attendance averaged about thirty, and consisted chiefly of women, including several physicians and trained nurses actively interested in philanthropic work. There were several clergymen, two or three of them being colored men. Students also were present both from the graduate and the undergraduate department.

Ten Friday afternoon conferences of six students were held. The subjects under discussion were the English Poor Law and Charitable Law and Custom. A carefully written report of each conference was read at the following meeting by one of the class in turn. Several important books bearing on the subject were reported on verbally at two evening conferences held at the close of the work.

H. B. Adams.
J. M. Vincent.

Philosophy.

I have the honor to submit the following report of undergraduate courses in Logic, Psychology, Ethics, and the History of Philosophy, and of the graduate course in the History of Philosophy, conducted by me during the academic year 1899–1900.

In each of the "groups" offered to the choice of candidates for the degree of Bachelor of Arts, five hours a week are assigned to philosophy. This time is divided between the several subjects as follows: Deductive and
Inductive Logic, until the Christmas recess; Psychology, January 1 to April 1; Ethics, April 1 to June 1; Outlines of the History of Philosophy, weekly. The instruction is simple and untechnical, and adapted, as far as possible, to the needs of those to whom these studies are new; attention is, however, called to fundamental problems, and the work is intended to serve as an introduction to general philosophical study. Text-books are used in each subject, as affording definite material of acquisition, but informal lectures, discussions in the class, and passages from various authors assigned for reading, are largely relied upon in the presentation. Each member of the class is required to prepare two essays. Forty-three students have been in attendance during the year.

Creighton's Introductory Logic has been the basis of instruction, this year, in Logic, with references to the works of Mill, Bain, Jevons, and other writers.

In Psychology, Baldwin's Elements of Psychology and Ladd's Outlines of Physiological Psychology have been used as text-books, supplemented by many references to the works of other authors. A series of lectures on the anatomy and physiology of the nervous system was given, as a part of the course, by Dr. L. F. Barker.

The work in Ethics was mainly confined to the theoretical and historical aspects of the subject, questions of applied ethics receiving, for lack of time, little attention. The topics treated are such as these: The various forms of feeling native to our constitution, and constituting the possible motives of conduct; the conditions and nature of the sense of obligation; the authority of conscience; the diversities of moral sentiment; the historic theories of morals—hedonism, utilitarianism, intuitionism, and the application to ethical theory of the doctrine of evolution. The instruction was given, to a considerable extent, through lectures; Fowler's Principles of Morals, part II, was employed as a text-book.

One hour each week was used during the first half of the year, for a brief outline of the History of Philosophy, and the survey was brought down, in a summary way, to the modern period. During the latter part of the year, a weekly lecture was given for the benefit of those able to attend it as a voluntary exercise.

For some years past it has been customary to invite, toward the end of the year, three or four gentlemen to address the class for the purpose of presenting considerations likely to be serviceable to them in the choice of a vocation. Dr. W. S. Thayer, Arthur George Brown, Esq., Mr. John E. Hurst, and the President of the University kindly rendered the class this useful service.

A course in the History of Philosophy, for graduate students, was conducted during the year, consisting of the reading and discussion of representative works in modern philosophy, from Descartes to Kant. The lectures presupposed the reading of the following works: Bacon's Novum Organum, book I and a part of book II; Descartes' Method, Meditations and Principles
of Philosophy; Spinoza's Ethics; Leibnitz's Monadology; Locke's Essay on Human Understanding, books i, ii, iv; Berkeley's Principles of Human Knowledge; Hume's Treatise on Human Nature, book i; a portion of Kant's Critique of Pure Reason. Eleven students followed the course.

Edward H. Griffin,
Professor of the History of Philosophy.

Drawing.

The following report of the work of the undergraduate classes in Drawing, during the year 1899-1900, is respectfully submitted:

The course of instruction was, for the first half-year, drawing from simple geometrical forms, beginning with outline and working up to more complicated groups of figures in light and shade. A knowledge of freehand perspective was also included in this early instruction.

In the second half-year the classes were divided: students looking forward to courses in Medicine or Biology continued the work of drawing bones and other natural specimens in order to give them a knowledge of the practical application of drawing in the illustration of lectures in these studies. The practical worth of this work has been commended by several of the instructors in the anatomical department of the Johns Hopkins Hospital.

A class of students was instructed in botanical drawing by Dr. Dreyer, during the latter part of the term.

S. Edwin Whiteman,
Instructor in Drawing.
## TABULAR STATEMENT OF COURSES OF INSTRUCTION, 1899-1900.

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<th>Instructor</th>
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<th>No. of hours per week</th>
<th>No. of students, 1st half/yr.</th>
<th>No. of students, 2d half/yr.</th>
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<td>Cohen.</td>
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<td>Trigonometry; Analytic Geometry; Elem.</td>
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<tr>
<td>Baker.</td>
<td>Historical Readings.</td>
<td>2</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Hofmann.</td>
<td>Oral Exercises.</td>
<td>2</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td><strong>ROMANCE LANGUAGES.</strong></td>
<td></td>
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</tr>
<tr>
<td>Elliott.</td>
<td>French Seminary: Marie de France.</td>
<td>3</td>
<td>2</td>
<td>5</td>
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<tr>
<td>Elliott.</td>
<td>French Dialects.</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<td>Elliott.</td>
<td>French Physiological Phonetics.</td>
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<td>Elliott.</td>
<td>Romance Club.</td>
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<td>9</td>
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<td>Elliott.</td>
<td>Popular Latin.</td>
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<tr>
<td>Armstrong.</td>
<td>Old Provençal.</td>
<td>2</td>
<td>12</td>
<td>12</td>
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<tr>
<td>Armstrong.</td>
<td>Historical French Grammar.</td>
<td>2</td>
<td>12</td>
<td>12</td>
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<tr>
<td>Armstrong.</td>
<td>Elementary Old French Readings.</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Brush.</td>
<td>Old French Readings: Advanced.</td>
<td>1</td>
<td>9</td>
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<tr>
<td>Ogden.</td>
<td>French Lyric.</td>
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<td>12</td>
<td>12</td>
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<tr>
<td>Keidel.</td>
<td>Methodology of the Romance Languages.</td>
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<td>5</td>
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<td>Keidel.</td>
<td>Romance Palaeography.</td>
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<td>3</td>
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<tr>
<td>Marden.</td>
<td>Spanish Seminary.</td>
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<td>Marden.</td>
<td>Old Spanish Readings.</td>
<td>1</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Marden.</td>
<td>Spanish Philology.</td>
<td>2</td>
<td>4</td>
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<tr>
<td>Marden.</td>
<td>Early Spanish Drama.</td>
<td>2</td>
<td>8</td>
<td>8</td>
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<tr>
<td>Marden.</td>
<td>Spanish: Minor Course.</td>
<td>2</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Marden.</td>
<td>Spanish: Elective Course.</td>
<td>2</td>
<td>5</td>
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</table>
### Tabular Statement of Courses.

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
<th>No. of hours per week</th>
<th>No. of students, per hour</th>
<th>No. of students, in all</th>
<th>No. of students, in all, in half-terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gould</td>
<td>Conversational Spanish.</td>
<td>2</td>
<td>7</td>
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<tr>
<td>Gould</td>
<td>Commercial Spanish.</td>
<td>2</td>
<td>5</td>
<td>3</td>
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<tr>
<td>Ogden</td>
<td>French: Major Course.</td>
<td>4</td>
<td>7</td>
<td>6</td>
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<tr>
<td>Armstrong</td>
<td>French: Minor Course (Class A).</td>
<td>4</td>
<td>20</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Ogden</td>
<td>French: Minor Course (Class B).</td>
<td>4</td>
<td>10</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Ogden</td>
<td>French: Elective Course.</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Brush</td>
<td>Elementary French.</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Teillard</td>
<td>French Conversation.</td>
<td>1</td>
<td>10</td>
<td>4</td>
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<tr>
<td>Ogden</td>
<td>Italian: Minor Course.</td>
<td>4</td>
<td>8</td>
<td>5</td>
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<tr>
<td>Warren, F. M.</td>
<td>Breton Cycle. (Twenty lectures in February.)</td>
<td></td>
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</tr>
<tr>
<td>Warren, F. M.</td>
<td>Medieval and Modern French Drama. (Twelve lectures in February.)</td>
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</tr>
</tbody>
</table>

### English

- English Seminary: Epic Poetry; Beowulf.
  - 4 students.
  - 15 students.
  - 16 students.

- Anglo-Saxon and Modern English Grammar.
  - 1 student.
  - 8 students.

- Medieval Literature: Havelok the Dane.
  - 1 student.
  - 10 students.

- Journal Meeting. (Alternate weeks.)
  - 2 students.
  - 15 students.

- English Bible; Scottish Poets.
  - 1 student.
  - 8 students.

- Elizabethan Lit.; Early Scottish Poets: Major Course.
  - 2 students.
  - 4 students.

- English Literature: Early English: Minor Course.
  - 4 students.
  - 12 students.

- English Literature: Undergraduate Elective.
  - 2 students.
  - 14 students.

- English Literature: Second year.
  - 3 students.
  - 52 students.

- Rhetoric and Composition.
  - 3 students.
  - 65 students.
  - 64 students.

- Anglo-Saxon.
  - 2 students.
  - 6 students.

### History, Politics, and Economics

- Historical Seminar. (Alternate weeks.)
  - 2 students.
  - 21 students.

- Early History of Institutions.
  - 2 students.
  - 29 students.

- Greek Politics.
  - 2 students.
  - 18 students.

- History of Civilization.
  - 2 students.
  - 27 students.

- Educational Conference.
  - 2 students.
  - 18 students.

- Historical Conference.
  - 1 student.
  - 8 students.

- Reformation and Revolution.
  - 2 students.
  - 17 students.

- European History.
  - 2 students.
  - 23 students.

- Historical Politics; Modern Europe.
  - 2 students.
  - 32 students.

- General History Examinations.
  - 1 student.
  - 7 students.

- Southern History.
  - 1 student.
  - 5 students.

- Classical and Early European History.
  - 4 students.
  - 20 students.

- Economic Seminar.
  - 2 students.
  - 7 students.

- Principles of Economics.
  - 1 student.
  - 8 students.

- Transportation.
  - 2 students.
  - 11 students.

- Recent Economic Changes and Theories.
  - 2 students.
  - 9 students.

- Economic Thought before Adam Smith.
  - 2 students.
  - 9 students.

- Municipal Finance.
  - 2 students.
  - 8 students.

- Principles of Taxation.
  - 2 students.
  - 8 students.

- Elements of Economics.
  - 2 students.
  - 31 students.

- Money and Banking.
  - 2 students.
  - 33 students.

- Elements of Economics; Economic Life and Thought.
  - 2 students.
  - 15 students.
<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hollander, Barnett.</td>
<td>Money and Banking; Socialism and the Tariff.</td>
</tr>
<tr>
<td>Willoughby.</td>
<td>Comparative Constitutional Law.</td>
</tr>
<tr>
<td>Willoughby.</td>
<td>History of Political Philosophy.</td>
</tr>
<tr>
<td>Willoughby.</td>
<td>Political Conference. (Alternate weeks.)</td>
</tr>
<tr>
<td>Steiner.</td>
<td>American Political and Constitutional History.</td>
</tr>
<tr>
<td>Lee.</td>
<td>History of English Law.</td>
</tr>
<tr>
<td>Lee.</td>
<td>Introduction to the Study of Law.</td>
</tr>
<tr>
<td>Schouler.</td>
<td>Founders of the Republic. (Four lectures.)</td>
</tr>
<tr>
<td>Brackett.</td>
<td>Conference on Public Aid, Charity, and Correction.</td>
</tr>
<tr>
<td>Callahan.</td>
<td>Territorial Policy of the United States.</td>
</tr>
<tr>
<td>Callahan.</td>
<td>Diplomatic History of the Confederacy.</td>
</tr>
</tbody>
</table>

**Philosophy.**

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Griffin.</td>
<td>History of Philosophy.</td>
</tr>
<tr>
<td>Griffin.</td>
<td>Logic. (Until December 22.)</td>
</tr>
<tr>
<td>Griffin.</td>
<td>Psychology. (January 2 to March 31.)</td>
</tr>
<tr>
<td>Griffin.</td>
<td>Ethics. (After April 1.)</td>
</tr>
</tbody>
</table>

**Drawing.**

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whiteman.</td>
<td>Freehand, Constructive, and Perspective Drawing.</td>
</tr>
<tr>
<td>Whiteman.</td>
<td>Special Work.</td>
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</table>

**Forensics and Elocution.**

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee.</td>
<td>Parliamentary Practice. (Alternate weeks.)</td>
</tr>
<tr>
<td>Lee.</td>
<td>Conference in Parliamentary Practice. (Alt. weeks.)</td>
</tr>
<tr>
<td>Lee.</td>
<td>Parliamentary Law.</td>
</tr>
<tr>
<td>Lee.</td>
<td>Elements of Public Speaking.</td>
</tr>
<tr>
<td>Lee.</td>
<td>Public Lecturing.</td>
</tr>
</tbody>
</table>
DEGREES CONFERRED, 1899-1900.

Doctors of Philosophy.


Degrees Conferred.


Clyde Chew Glascoc, of Buckland, Va., University of Virginia, 1892. **Subjects**: German, French, and Latin. **Dissertation**: The Preterit Tense of the verb haben in Rime-position in Middle High German. **Referees on dissertation**: Professors Wood and Vos.


Joseph Caldwell Herrick, of Virginia, A. B., University of Virginia, 1896. **Subjects**: Physiology, Chemistry, and Physics. **Dissertation**: The Influence of Variation of Temperature upon Nervous Conductivity, studied by the Galvanometric Method. **Referees on dissertation**: Professors Howell and Dreyer.


Walter Hullihen, of Staunton, Va., A. B., University of Virginia, 1896. **Subjects**: Latin, Greek, and German. **Dissertation**: The Use of the Particles An tequam and Primaquam, with special reference to the Historical Development of their Subjunctive Usage. **Referees on dissertation**: Professors Smith and Spieler.
Degrees Conferred.


George Lovie Pierce Radcliffe, of Lloyd's, Md., A. B., Johns Hopkins University, 1897. Subjects: History, Politics, and Economics. Dissertation: Governor Thomas H. Hicks of Maryland, and the Civil War. Referees on dissertation: Professor Adams and Dr. Steiner.


Degrees Conferred.


*Doctors of Medicine.*

Joseph Akerman, of Cartersville, Ga., A. B., University of Georgia, 1894.

Herbert Williams Allen, of Oakland, Cal., S. B., University of California, 1896.

Mabel Fletcher Austin, of Minneapolis, Minn., S. B., University of Minnesota, 1893.

Alma Emerson Beale, of Schaghticoke, N. Y., A. B., Wellesley College, 1891.

Milton Bettmann, of Cincinnati, O., A. B., Harvard University, 1897.


Lawrason Brown, of Casanova, Va., A. B., Johns Hopkins University, 1895.

Herman Brüle, of Fredericksburg, Va., A. B. and S. B., Hampden-Sidney College, 1895.

Curtis Field Burnam, Jr., of Frankfort, Ky., A. B., Central University, 1895.

Arthur Smith Chittenden, of Binghamton, N. Y., A. B., Yale University, 1896.


William Remshart Dancy, of Savannah, Ga., S. B., University of Georgia, 1896.

Frank Curtiss Davis, of Minneapolis, Minn., A. B., Amherst College, 1895.

Augustus Hartje Eggers, of Alleghany, Pa., Ph. B., Yale University, 1896.
Degrees Conferred.

Henry Courtney Evans, of Youngstown, O., A. B., Adelbert College, 1896.
Rose Fairbank, of Hatfield, Mass., A. B., Smith College, 1895.
Arthur Lawrence Fisher, of San Francisco, Cal., S. B., University of California, 1896.
Howard Fletcher, of Warrenton, Va., A. B., Randolph-Macon College, 1895.

Joseph Marshall Flint, of Chicago, Ill., S. B., Univ. of Chicago, 1895.
William Patrick Healy, of Bridgeport, Conn., Ph. B., Yale Univ., 1896.
William Faithful Hendrickson, of Baltimore, A. B., Johns Hopkins University, 1896.
Albion Walter Hewlett, of San Francisco, Cal., S. B., University of California, 1895.

Preston Kyes, of North Jay, Me., A. B., Bowdoin College, 1896.
Leona Lebus, of Los Angeles, Cal., S. B., Wellesley College, 1896.
Warren Harmon Lewis, of Oak Park, III., S. B., Univ. of Michigan, 1894.
Harry Wilson Little, of Evansville, Ind., S. B., Wabash College, 1896.
John Bruce MacCallum, of Dunnville, Ont., A. B., Univ. of Toronto, 1896.
Mary Wilbur Marvell, of Fall River, Mass., S. B., Wellesley College, 1894.

Clara R. Moltzer, of New York City, A. B., Barnard College, Columbia University, 1896.


Edward Spiller Oliver, of Baltimore, A. B., Johns Hopkins Univ., 1895.
Richard Foster Rand, of Meriden, Conn., Ph. B., Yale University, 1895.
Dorothy M. Reed, of Leyden, N. Y., B. L., Smith College, 1895.

Glunville Yeisley Rusk, of Baltimore, A. B., Johns Hopkins Univ., 1896.


Ellen Appleton Stone, of Providence, R. I., A. B., Radcliffe College, Harvard University, 1895.

Mortimer Warren, of Cumberland Mills, Me., A. B., Bowdoin College, 1896.

Paul Gerhardt Woolley, of Chicago, Ill., S. B., University of Chicago, 1896.
Degrees Conferred.

Bachelors of Arts.

Roger Brooke Taney Anderson, of Baltimore.
Howard Baetjer, of Baltimore.
Christian John Beeuwkes, of Baltimore.
Henry Bogue, of Baltimore.
Byron Noble Bouchelle, of Chesapeake City, Md.
Austin Adams Breed, of Cincinnati, Ohio.
Charles Edward Brooks, of Baltimore.
Edward Skipwith Bruce, of Baltimore.
James Luther Albert Burrell, of Baltimore.
Lyttleton Morgan Chambers, of Baltimore.
Christopher Thompson Clark, of Washington, D. C.
McQuilkin DeGrange, of Frederick, Md.
John Howard Eager, Jr., of Baltimore.
John Edward Ewell, of Baltimore.
Frederick Bonner Flinn, of Worcester, Mass.
Frederick Foster, of Baltimore.
Otto Charles Glaser, of Baltimore.
Joseph David Greene, of Lake Benton, Minn.
John Wheeler Griffin, of Baltimore.
Stuart Heyman, of Baltimore.
Harry Dickinson Hill, of Baltimore.
John Philip Hill, of Baltimore.
Edward Pechin Hyde, of Baltimore.
Albert Keidel, of Catonsville, Md.
Robert Clark Kerr, of Baltimore.
Maurice Lazenby, of Baltimore.
Donald Macy Liddell, of Denver, Colo.
Norvin Rudolf Lindheim, of Greensboro, N. C.
Leonard Leopold Mackall, of Baltimore.
T. Hartley Marshall, of Pikesville, Md.
Reginald Ley McAll, of Red Hill, England.
Jared Sparks Moore, of Baltimore.
James Girvin Peters, of Baltimore.
Tobias Noël Deloughmoe Purcell, of Sykesville, Md.
Robert Bruce Roulston, of Baltimore.
Frank Peyton Rous, of Baltimore.
James Edward Routh, Jr., of Petersburg, Va.
Alexander Van Rensselaer Schermerhorn, of Baltimore.
Wilson Levering Smith, of Baltimore.
Miltenberger Neale Smull, of Baltimore.
James Carlyle Stephens, of Norfolk, Va.
George Lane Taneyhill, Jr., of Baltimore.
Bayard Turnbull, of Baltimore.
Miller Wingert, of Hagerstown, Md.
Nathan Winslow, of Baltimore.
Arthur Wright, of Baltimore County, Md.

Philip Hanson Hiss, Jr., of New York—(Class of 1891).

(47)
REPORT ON THE OFFICIAL STATE BUREAUS CONNECTED WITH THE JOHNS HOPKINS UNIVERSITY.

TO THE PRESIDENT OF THE JOHNS HOPKINS UNIVERSITY:

I herewith submit for your information the following statement regarding the work of the Maryland Geological Survey and Maryland Weather Service during the past academic year. The investigations of these bureaus are so closely identified with the work of the geological department that the results obtained properly constitute a part of the investigations of the university.

MARYLAND GEOLOGICAL SURVEY.

The Maryland Geological Survey has now been in operation somewhat over four years, having been established by an act of the General Assembly in March, 1896. Professor Clark has been State Geologist since the organization of the Survey. The original appropriation of $10,000 annually provided by the General Assembly of 1896 was increased by the passage of two additional acts in 1898, establishing a Division of Topography, with an appropriation of $5,000 annually, and a Highway Division, with an appropriation of $10,000 annually, making the combined resources of the Survey at the present time $25,000 a year.

The work of the Survey during the past year has embraced a wide field of investigation in which geology, topography, physiography, terrestrial magnetism, agriculture, forestry, and highway engineering have formed conspicuous parts.

The geological work, which is directly under the charge of the State Geologist, is divided into three divisions, Dr. E. B. Mathews, the Assistant State Geologist, being Chief of the Division of the Piedmont Plateau, Professor Charles S. Prosser, of the Division of the Appalachian Region, and Dr. G. B. Shattuck, of the Division of the Coastal Plain. A large area was mapped in portions of western Maryland where Professor Prosser and his associates, Messrs. R. B. Rowe and G. C. Martin, have been engaged in further investigations on the Devonian and Carboniferous formations. Dr. Mathews made considerable progress in the mapping of the southern Piedmont belt in Montgomery and Howard counties, while
Dr. Shattuck and his associates, Messrs. B. L. Miller and W. D. Neal, completed the mapping of the Miocene and Pleistocene deposits of Calvert and St. Mary's counties. Mr. A. Bibbins also continued his study of the Potomac formation.

The topographic work of the Survey was continued throughout the year in cooperation with the U. S. Geological Survey, parties being kept in the field in Worcester, Somerset, and Wicomico counties, as well as in northern Harford and Baltimore counties. The two counties first mentioned, together with Harford county, were completed, and the topographic sheets will shortly be published.

The Highway work of the Survey has been continued during the past year under the direction of Dr. H. F. Reid, Chief of the Division of Highways, who has had associated with him in his work Messrs. A. N. Johnson and H. H. Hindshaw as highway engineers. The report which was prepared during the previous year has been extensively distributed, the demand for the volume from outside the State, as the result of the numerous favorable reviews, being very great. A number of roads have been supervised by the highway engineers, while tests of road-metals have been made for numerous public and private interests. Nearly all of the paving materials now used by the city of Baltimore are submitted to the Highway Division before the contracts are let. In the case of vitrified brick now being so extensively employed in city paving, the results of the physical test, applied in the laboratory of the Survey in accordance with the established tests of the National Brickmakers' Association, are of the greatest practical moment. The value of this phase of the work is much appreciated.

The agricultural soils of the State have been studied during the past year under a plan of cooperation with Professor Milton Whitney, Chief of the Division of Soils of the U. S. Department of Agriculture. In this work the Survey is also associated with the Maryland Agricultural Experiment Station, so that the several interests of the State are closely cooperating. Detailed soil maps have been already prepared for Allegany, Garrett, Cecil, Calvert and St. Mary's counties by Mr. C. W. Dorsey, who had the assistance of Mr. J. A. Bonsteel in his later work. This investigation of the soils will be pushed forward as rapidly as the underlying geology is studied and platted.

A study of the hydrography of the State has also been taken up in cooperation with the Division of Hydrography of the U. S. Geological Survey, through Mr. F. H. Newell, the Chief of the Division. This work is carried on jointly by the Maryland Geological Survey and the Maryland Weather Service, and already many gauges have been established and records secured from the leading streams of the State. A report has already been prepared by Mr. Newell on the hydrographic conditions of Allegany county.

The forestry conditions of the State, which are recognized to depend in no small degree upon the physiographic and geologic features, have been
taken up for study, in cooperation with the Forestry Divisions of the U. S. Geological Survey and the U. S. Department of Agriculture through their chiefs, Messrs. Henry Gannett and Gifford Pinchot. Already a complete forestry survey has been completed in Allegany county as the result of this cooperation, and a report has been written regarding the forestry conditions of the county by Mr. S. B. Sudworth, the Dendrologist of the U. S. Department of Agriculture.

The distribution of plant and animal life in Maryland is so closely related to the physiography, geology, and soils, that the Survey has in contemplation a thorough study of the fauna and flora of the State. These investigations will be under the direction of Dr. C. Hart Merriam, Chief of the Biological Survey of the U. S. Department of Agriculture, who will study the question largely from the standpoint of the distribution of life-zones. Allegany and Garrett counties have been studied in this way. Independent work bearing upon this problem has also been done by Messrs. Basil Sollers and B. W. Barton, both of whom have a wide knowledge of the systematic botany of the State.

Magnetic work under the charge of Dr. L. A. Bauer, who is now Chief of the Division of Terrestrial Magnetism of the U. S. Coast and Geodetic Survey, has been continued in various portions of the State, and provision made for the establishment of meridian lines in those counties where this work had not been already done. Dr. Bauer has also prepared a report on magnetic declination in Allegany county, which will form part of a forthcoming volume.

A special investigation of much importance was started a year ago by Mr. Bailey Willis, of the U. S. Geological Survey, on the physical history of the Appalachian Region. This work has been completed and a report already prepared, which will form a part of Volume IV of the State Geological Survey reports.

The constant demand for the publications of the Survey has practically exhausted the editions of Volumes I and II, so that the Survey is no longer distributing these reports. Volume III, relating to the highways, was published in an unusually large edition and these reports are still being extensively distributed. Volume IV of the Geological Survey reports is already partly in press, as well as a report on Allegany county, the first of a new series of county reports. The manuscript and plates of the first of the systematic volumes, dealing with the Eocene, are also nearly ready for publication.

MARYLAND WEATHER SERVICE.

The Maryland Weather Service has now been in operation for over nine years, having been established in May, 1891, under the joint auspices of the Johns Hopkins University, the Maryland Agricultural College, and the U. S. Weather Bureau. It became an official organization by an act of the General Assembly which was approved by the Governor on April 6,
1892. Under the authority granted by this act the State Service became permanently established at the Johns Hopkins University, under the direction of a Board of Control nominated by the Governor. The appropriations for the maintenance of this bureau are $2,000 annually, the fund being used for publications and for such apparatus as is necessary for the special investigations to which the Service is now devoting its attention.

The investigations of the Maryland Weather Service are broad in their scope, and include not only meteorology in its narrower sense, but also physiography, medical climatology, agricultural soils, hydrography, forestry, and distribution of the life-zones of the State. Much work was carried on in several of these lines during the past year, either independently or in association with the Maryland Geological Survey. The cooperation granted by the U. S. Department of Agriculture, through the chiefs of its various bureaus and divisions, has been of special significance. The cordial support which has been given to the work, especially by Professor Willis L. Moore, Chief of the U. S. Weather Bureau, and Hon. Charles D. Walcott, Director of the U. S. Geological Survey, has rendered it possible to add much to our knowledge of Maryland climatological conditions. At the same time the cordial relations existing between the Weather Service and the State agricultural institutions has produced valuable results in many lines, and already plans are formed for much more extensive cooperation.

The Maryland Weather Service completed a year ago the first volume of its reports dealing with the physiography and meteorology of the State. This report has been most favorably reviewed in the scientific journals both of this and foreign countries, and there has been a large demand for the volume from many sources, especially on the part of teachers.

The Maryland Weather Service has also been engaged in other lines of research preparatory to the publication of further reports. This work relates especially to the agricultural soils, the hydrography, the forestry, and the distribution of the life-zones in the State, and already considerable progress has been made in these directions.

WM. BULLOCK CLARK,
State Geologist and Director.
ABSTRACT OF THE REPORT OF THE JOHNS HOPKINS PRESS.

The several serials here issued have been continued through the year as follows:

The seventeenth series (600 pages) of the Studies in Historical and Political Science has been completed and the eighteenth series is in progress. The numbers have been largely devoted to Maryland and Southern History, containing papers on the Chesapeake and Ohio Canal, Public Educational Work in Baltimore, Slavery in North Carolina, Taxation in Southern States, etc. In connection with these Studies, has been published the first volume of the series of Lectures on Diplomatic History, maintained by Dr. Albert Shaw (Ph. D., 1884). This volume is by Dr. John H. Latané, On the Diplomatic Relations between the United States and Spanish America, and contains 294 pages.

Of the American Journal of Mathematics the twenty-first volume has been completed, and the twenty-second is now in progress. During the year, Professor Newcomb has retired from the editorship of the journal, and the editorial direction is now in the hands of Professor Frank Morley, with the cooperation of Professor Newcomb, Dr. Cohen, Dr. Scott, and others. This journal appears quarterly, and contains about 400 pages in each annual volume.

Of the American Chemical Journal volumes twenty-two and twenty-three have been completed, and four numbers of volume twenty-four have appeared. The journal appears monthly, and is issued in two volumes of six numbers and of about 600 pages each annually.

Of the American Journal of Philology two numbers of volume twenty and two numbers of volume twenty-one have appeared. These contain 400 pages. This journal appears quarterly.

Volume four of the Journal of Experimental Medicine (668 pages and 47 illustrations) has been completed, and one number of volume five (110 pages and five plates) has appeared.

Of the Memoirs from the Biological Laboratory the fourth part of volume four (84 pages and 3 plates) and the fifth part of volume four (22 pages and 3 plates), have appeared. The first of these contains Dr. E. W. Berger's paper on the Physiology and Histology of the Cubomedusae. This includes and is based on the notes of the late Dr. F. S. Conant. The cost of its publication was met by a generous contribution from the family of Dr. Conant. The other part contains a monograph on Ophiura Brevispina, by Dr. Caswell Grave.
Of the Modern Language Notes volume fourteen has been completed, and six numbers of volume fifteen have appeared.

Of the Contributions to Assyriology part two of volume four, containing 124 pages and 26 illustrations, has been issued.

Numbers 142 to 147 of the University Circulars, including 88 pages, quarto, have appeared since the last report.

The twenty-fourth Annual Report of the President was issued in January, 1900, and the Annual Register of the University and the special Announcement of the Medical School in May.

Of the Hebrew Text of the Polychrome Bible, edited by Professor Haupt, two parts have been issued during the year, Judges (76 pages) and Ezekiel (120 pages).

The reproduction of the unique manuscript of the Kashmirian Atharva-Veda is still in progress under the direction of Professor Bloomfield. It is expected that the work will be ready before the close of the academic year.

During the current year we have undertaken the publication of the journal of Terrestrial Magnetism and Atmospheric Electricity, edited by Dr. L. A. Bauer, lecturer in geology in this University. It appears quarterly, and the fifth volume is now in progress.

Of the Johns Hopkins Hospital Reports, appearing irregularly, volume seven has been completed, and parts one and two of volume eight (160 pages) have been issued. Of the Johns Hopkins Hospital Bulletin volume ten has been completed and nine numbers of volume eleven (230 pages) have appeared.

In May, was published a large and important volume of Contributions to the Science of Medicine, by the pupils and friends of Professor Welch. It contains 1074 pages and 276 illustrations. It includes 38 separate papers, and may be considered a most noteworthy contribution to scientific medicine.

There was prepared and shipped to the Paris Exposition an exhibit for the section devoted to American Education. It included full sets of our publications, a set of the maps of the Solar Spectrum made by Professor Rowland, and divers illustrations designed to indicate the character of the work here in progress, especially in medicine and its allied sciences, in physics, and in geology. Another exhibit limited to our publications was also made in the department devoted to the American book trade, and there were minor exhibits in the section of periodicals in the American building. We have been advised that awards of grand prizes have been made to our general exhibit and to our exhibit of the spectrum maps, and a gold medal to the exhibit in the book-department.

There have been received, in accordance with the regulations, 150 copies of the dissertations accepted for the degree of Doctor of Philosophy from the graduates named below:
Berger, E. W.—Physiology and Histology of the Cubomedusae.
Bigelow, R. P.—The Anatomy and Development of Cassiopea Xamachana.
Black, H. V.—The Permanganates of Barium, Strontium, and Calcium.
Blanchard, W. M.—The Chlorides of Parabromorthosulphobenzoic Acid and Some of their Derivatives.
Canter, H.—Orthophenylsulphonebenzoic Acid and Related Compounds.
Chambliss, H.—The Permanganates of Magnesium, Zinc, and Cadmium.
Drewry, W. S.—Slave Insurrections in Virginia.
Edgar, P.—A Study of Shelley.
Edwards, G. V.—The Ablative of Quality and the Genitive of Quality.
Fassig, O. L.—Types of March Weather in the United States.
Gane, H. S.—Some Neocene Corals of the United States.
Humphreys, R. E.—The Action of Phenol on the Chlorides of Orthosulphobenzoic Acid.
Jones, W. A.—A Contribution to the Knowledge of Dicarbonyl Cuprous Chloride.
Kaye, P. L.—The Colonial Executive Prior to the Restoration.
Knowler, H. McE.—The Embryology of a Termite.
Krapp, G. P.—The Legend of Saint Patrick’s Purgatory: Its later Literary History.
Kurrelmeyer, W.—The Historical Development of the Types of the First Person Plural Imperative in German.
Mathews, E. B.—The Granitic Rocks of the Pike’s Peak Quadrangle.
Milden, A. W.—The Limitations of the Predicative Position in Greek.
Ogden, P.—A Comparative Study of the poem Guillaume D’Angleterre.
Olsen, J. C.—Permanganic Acid by Electrolysis.
Patterson, A. M.—The Reduction of Permanganic Acid by Hydrogen and Ethylene and a Study of some of its Salts.
Ward, G. W.—The Early Development of the Chesapeake and Ohio Canal Project.
Zahn, A. F.—The Resistance of the Air determined at Speeds below One Thousand Feet a Second.
The system of exchanges has been conducted as in previous years.

N. Murray.
ABSTRACT OF THE REPORT OF THE LIBRARIAN.

The number of bound volumes in the library is 94,370; the accessions during the year have amounted to 3288. Of the accessions, 1421 were received by gift or exchange.

The number of pamphlets and unbound volumes received during the year exceeded 5000. The total number of pamphlets in the library is estimated at 100,000.

Over 1500 serials are regularly received by the library.

The principal gifts of the year were:

From Mr. Ernest Schneisser, of Baltimore, a second installment of the collection of German Literature, to the growth of which he has so liberally contributed.

From Mr. Leopold Strouse, of Baltimore, 119 bound volumes and a large number of pamphlets to be added to the Strouse Rabbinical Library founded and maintained by Mr. Strouse.

From Mr. Theodore Marburg, of Baltimore, two hundred dollars to be expended in the purchase of books in physics.

From a citizen of Baltimore, a subscription for five years to the International Catalogue of Scientific Literature, to be issued under the auspices of the Royal Society of London.

From Mrs. Wm. N. Symington (of Richmond, Va.), 177 bound volumes and 77 unbound volumes from the library of her deceased husband. The works are mainly in the fields of mining, metallurgy, civil engineering, chemistry, and physics.

From Professor Cleveland Abbe, of Washington, 184 volumes and 150 pamphlets, including many valuable atlases and other works, for the Abbe Meteorological Library.

From Mr. James L. McLane, of Baltimore, 294 volumes, including many early volumes of the Congressional Globe and Record, the Annals of Congress, the American State Papers, and Congressional Debates.

From Madame Quinet, of Paris, a set of the writings of the late Edgar Quinet.

From the Due de Loubat, of Paris, reproductions in color of Mexican manuscripts.

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Report of the Librarian.

From the University of Cambridge, a copy of the bronze medal presented to Professor Stokes upon his jubilee; also the quarto volume of memoirs, presented on the same occasion.

From Mr. Wm. W. Spence, of Baltimore, the continuation of the set of the Jesuit Relations.

From President Gilman, a large number of volumes relating to a variety of subjects.

From Henry Holt & Co., of New York, their publications for the year.

From the family of the late E. C. Breithaupt (a former student of the University), a number of books from his library.

The following gifts also are worthy of special mention:

From the Minister of Public Instruction of France, the work of G. d'Avenel on the History of Property, Salaries, etc.

From Professor Adams, a large number of books in education, southern history, etc.

From the Nansen Fund for the Advancement of Science, the first volume of Nansen's report on his North Polar Expedition.

From the Adams Memorial Committee (Cambridge), the memorial edition of the scientific works of John Couch Adams.

From the Faculty of Advocates, Edinburgh, MacFarlane's Genealogical Collections.

From the University of Cracow, the first part of the official history of the University.

From the Norwegian Meteorological Institute, their publications.

From the U. S. Department of State, the Proceedings of the Hague Peace Conference, and a number of other important volumes.

From the Royal Library of Berlin, three additional volumes of the catalogues of its Oriental manuscripts, etc.

From the Société de Biologie of Paris, its semicentennial jubilee volume.

From the University of Glasgow, the catalogue of the Hunterian Museum.

From the Bishop Museum of Honolulu, its folio publications in natural history.

From Professor Alexander Agassiz, the year's publications of the Harvard Museum of Comparative Zoology.

From Dr. Abraham Jacobi, the Festschrift issued in honor of his 70th birthday.

A number of other gifts are enumerated in the list of donations hereto appended.

A fire in the Chemical Laboratory, in December, caused much damage to the collection of chemical books. The volumes were removed to one of the rooms of the main library. A large number of the books have been rebound and put in good condition; the volumes lost or irreparably damaged have been replaced, and the collection has now been substantially reestablished on the shelves in the chemical laboratory.

The usual installments of academic exchanges have been received.
Report of the Librarian.

The general library has been in charge of Mr. Brandow, with two assistants.

The classical library has been in charge of Dr. C. W. E. Miller, under the supervision of Professor Gildersleeve.

The modern language collection has been in charge of Dr. Keidel and a library attendant, under the supervision of Professor Wood.

The historical collection has been in charge of Miss Daran, under the direction of Professor Adams and Dr. Vincent.

The chemical library has been in charge of Dr. Gilpin, under the direction of Professor Remsen.

The biological library has been under the direction of Professor Brooks and Dr. Andrews, with a library attendant.

The geological library has been in charge of Dr. Mathews, under the supervision of Professor Clark.

The astronomical library has been in charge of Dr. Cohen.

The physical and mathematical seminary collections have been under the supervision of Dr. Ames.

During the year, Miss Blogg has been relieved of attendance in the Medical School Library, and she is now in charge of the collection of medical books in the hospital building, with a general supervision over all the medical collections. A special attendant is in charge of the books relating to physiology, anatomy, physiological chemistry, etc., in the library rooms in the physiological laboratory.

During the year, the New Book Department has purchased 3500 volumes of the estimated value of $6300. Since the opening of the department, over 100,000 volumes of the estimated value of $160,000 have been exhibited on its shelves.

N. Murray,
Librarian.

1906, October 1.
GIFTS TO THE LIBRARY.

ABBIE, CLEVELAND. A large number of volumes for the Abbe Meteorological Library. (See p. 96.)

ABBOTT, S. W. (Author.) Condition of Public Hygiene and State Medicine. Boston, 1869. Q.

Aberdeen, University of. Minutes of the General Council, 1850-1897. Aberdeen, 1899. O.

Macdonald, J. Place Names of West Aberdeenshire. Aberdeen, 1899. Q.


Massachusetts Historical Society Proceedings. Boston, 1899. O.

Monographs on Education in the United States. Albany, 1900. 2 vols. Q.

And a large number of valuable books and pamphlets relating principally to Southern history and literature.


Aiz, University of. Seventeen academic publications.

Algiers, University of. Two academic publications.

Alt, Adolf. (Author.) Glandular Structures appertaining to the Human Eye. St. Louis, 1900. O.


American Swedenborg Society. Five volumes of Swedenborg's works. 1890-99. O.

Ames, Joseph S. Nine miscellaneous volumes.

Andrews, Ethan A. Eight volumes relating to Botany.

Angot, A. (Author.) Thirty-five publications on Meteorology, etc.


Auburn Theological Seminary. Addresses at the Inauguration of Rev. George B. Stewart, as President. 1899. O.

Balch, E. S. (Author.) Glacières, or Freezing Caverns. Phila., 1900. O.


Bancroft-Whitney Company. Sutherland, W. A. Index to the Notes on the United States Reports. San Francisco, 1900. O.


Barrenger, P. B. (Author.) The American Negro. Raleigh, 1900. O.

Barrois, F. and Ronchetti, L. Catalogue de la collection paléontologique de Philippe Maberton. Q.

Bashforth, F. (Author.) Supplement to account of experiments with Bashforth Chronograph. Cambridge, 1900. O.

Batchelor, A. S. (Author.) Influences in the Adoption of the Federal Constitution by New Hampshire. Concord, 1900. O.
Gifts to the Library.

BAUERMEISTER, F. (Publisher.) Pollack, B. Methods of Staining the Nervous System. Glasgow, 1899. O.

BENGAL, LIEUTENANT-GOVERNOR OF. Dictionary of the Lepcha Language. Berlin, 1898. Q.


BERLIN, ROYAL LIBRARY. Catalogues of Accessions, 1885-9. 4 vols.


FAUX HAWAIIENSIS. Cambridge, 1889. F.

BESANÇON, UNIVERSITY OF. Two academic publications.

BLOOMFIELD, M. R. (Author.) The Atharva-Veda. Strassburg, 1899. Q.

BODLEIAN LIBRARY. Oxford Prize Essays for the year.


BORDEAUX, UNIVERSITY OF. One hundred and thirty-two academic publications.

BOWDITCH, V. Y. (Author.) The Massachusetts State Hospital for Consumptives at Rutland. Boston, 1900. S.

And five other publications.


Church, I. P. Mechanics of Engineering. New York, 1890. O.

Ewing, J. A. Magnetic Induction in Iron and other Metals. London, 1892. O.

Kapp, G. Alternate-current Machinery. New York, 1899. T.


Osborn, F. C. Tables of Moments of Inertia. 2d ed. New York, 1889. S.


Spangler, H. W. Valve-Gears. New York, 1890. O.

BRIGHT, J. W. Ellis, O. R. Hanes Prydain Fawr. London. 3 vols. O.


BROWN UNIVERSITY. Addresses at the Inauguration of President Faunce. Providence, 1899. O.

BUENOS AIRES, MUSEO NACIONAL. Publications for the year. Buenos Aires, 1899. O.

RUMPUS, C. Eight of his recent publications. O.

BUSKEY, R. C. (Author.) American Medical Ethics. Washington, 1900. O.

CAEN, UNIVERSITY OF. Twenty-three academic publications.

CALIFORNIA ACADEMY OF SCIENCES. Publications. 5 vols. 1900. O. and Q.

CAMBRIDGE (ENG.), UNIVERSITY OF. A bronze copy of the medal presented to Professor Sir G. G. Stokes by the University on the occasion of his Jubilee. 1900.

Memoirs presented to the Cambridge Philosophical Society on the occasion of the Jubilee of Sir G. G. Stokes, Cambridge, 1900. Q.


CAMBRIDGE (MASS.) CITY CLERK. Annual Documents. 19-0. O.

CANADA GEOLOGICAL SURVEY. Annual Report, 1897. 2 vols. Ottawa, 1899. O.

Contributions to Canadian Palaeontology. 2 vols. Ottawa, 1899. O.

Six other miscellaneous publications.

CANADA, ROYAL SOCIETY OF. Proceedings and Transactions. Ottawa, 1899. Q.

CANADIAN INSTITUTE. Semi-Centennial Memorial Volume, 1849-1899. Toronto, 1899. Q.

CAMBRIDGE TECHNICAL HIGH SCHOOL. Six academic publications.


CHARLESTON (S. C.), MAYOR OF. (Hon. J. Adger Snyth.) Year-Book of the city of Charleston for 1899. O.
Gifts to the Library.

Chessin, A. S. (Author.) On Relative Motion. 1900. Q.
Chicago Academy of Sciences. Fortieth Annual Report, 1897. Chicago, 1898. O.
Baker, F. C. The Mollusca of the Chicago Area—the Pelecypoda. Chicago, 1898. O.
Chicago Entomological Society. Occasional Memoirs. Chicago, 1900. Q.
Chicago University Library. Twenty-seven dissertations. 1898-99.
Publications of the Yerkes Observatory. Chicago, 1900. Q.
Seven other academic publications.
Cohen, S. S. (Author.) The use of adrenal substance in the treatment of asthma.
Phil., 1900. O.
Progress in Therapeutics. Phila., 1900. O.
Colorado Springs, 1898 and '99. O.
Columbia University Library. Thirty-four academic publications.
Columbia University Library. Fiske, C. F. The Tales of Terror. Washington, 1900. O.
Conklin, E. G. (Author.) The Marine Biological Laboratory. Q.
Cornell University Library. Twenty-one academic publications.
Cornwallis, K. (Author.) The Conquest of Mexico and Peru. New York, 1899. D.
Paris, 1900. O.
Darbyshire, L. (Publisher.) Porter, R. F. Vested Wrongs. New York, 1900. O.
Dean, B. (Author.) The Devonian "Lamprey" Palaeospondylus Gunni, Traquair.
New York, 1899. F.
Denison, Charles W. Four of his recent publications. O. and Q.
New York, 1899. 2 vols. O.
Dillon, University of. Sixteen academic publications.
Dill, J. B. (Author.) The College Man and the Corporate Proposition. 1900. O.
Dominy, D. J. (Author.) Medicine and Disease in the Philippines. 1900. D.
Dos Passos, J. R. (Author.) The Growth and Rights of Aggregated Capital. 1899. O.
Dudley, H. S. (Editor.) The Perikmen Region. Vol. 2. Phila., 1900. O.
Edalji, Jamshedji. Reciprocally related figures and the principle of continuity.
Ahmedabad, 1900. O.
Edinburgh, Royal College of Physicians. Laboratory Reports. Vol. 7. Edinburgh, 1900. O.
Erlanger, University of. Three hundred and twelve academic publications.
Faculty of Advocates (Edinburgh). Macfarlane, W. Genealogical Collections, ed.
J. T. Clark. 2 vols. Edinburgh, 1900. O.
Field Columbian Museum. Publications for the year. O.
France, University of. (Faculté de Droit de Paris.) Two hundred and forty-one academic publications.
Freiburg, University of. One hundred and eight academic publications.
Gifts to the Library.

GALDANO, Z. G. DE. (Author.) Twelve publications on mathematics. Toledo and Zaragoza, 1885-95. O.

GERHARD, W. P. (Author.) Two publications on sanitation. O.

GIERSBURY, UNIVERSITY OF. Sixty academic publications.

GILDEMIUKE, B. L. A number of books relating to classical literature and philology.

GILMAN, D. C. A large number of miscellaneous volumes.

Glasgow University. Catalogue of the anatomical and pathological preparations of Dr. W. Hunter in the Hunterian Museum, Glasgow, 1900. 2 vols. O.

GOODRZCJ, J. (Author.) Essays on the Foundation of Education. Lansing, 1900. D.


GÖTTINGEN, UNIVERSITY OF. Ninety-six academic publications.

GRANT, U. S. Four of his recent publications.

GRAN, UNIVERSITY OF. Academic publications for the year.

GREENWICH ROYAL OBSERVATORY. Magnetic and Meteorological Observations. Results for 1897. F.

GREENSWALD, UNIVERSITY OF. One hundred and fifty-four academic publications.

GREENSBURG, UNIVERSITY OF. Twelve academic publications.


GROOME, P. L. (Author.) Rambles of a Southerner in Three Continents. Greensboro, 1891. D.

GUERNATIS, A. D. (Author.) Fibra; pagine di ricordi. Roma, 1900. O.

HAGERUP, H. (Publisher.) Jørgensen, A. D. The Dano-German Question. Copenhagen, 1900. O.

HALL, A. L. (Author.) The Missile and the Weapon. 1900. O.

HALLE, UNIVERSITY OF. Academic publications for the year.

HAMBURG (Medicinalrath.) Bericht des Medicinalrates über die medicinische Staaten des Hamburgerischen Staates, 1899. Q.

HAUFF, W. A. (Author.) The American Multiplier. New York, 1899. F.

Havana, University of. Oration inaugural, 1899-1900. Habana, 1899. F.

HAZARD, C. (Author.) The Narragansett Friends' Meeting in the XIXth Century. Boston, 1899. O.

HEARST, P. The international competition for the Phoebe Hearst architectural plan for the University of California. Q.

HEIDELBERG, UNIVERSITY OF. Academic publications for the year.

HERBIC, C. J. (Author.) The cranial and first spinal nerves of Menidia. Granville, 1899. O.


HOFFMAN, F. L. (Author.) Report as to the sanitary condition of the tombstones of Trinity Church. New York, 1885. O.

HOLY, H. & CO. Their publications for the year.


HUNT, RHID. (Author.) Acceleration of the mammalian heart. O.


INDIANA GEOLOGICAL SURVEY. Twenty-fourth Annual Report. Indianapolis, 1900. O.

IOWA GEOLOGICAL SURVEY. Annual Report, 1899. Des Moines, 1900. Q.

ISHAM, E. S. (Author.) Eliza Allen. Burlington, 1899. O.

ITALY, MINISTRY OF AGRICULTURE, INDUSTRY AND COMMERC. Statistica Industriale Lombarda. Roma, 1900. Q.

JACOB, A. Festanschrift in honor of Abraham Jacobl, M. D., LL. D., to commemorate the fourteenth anniversary of his birth. New York, 1899. Q.

JAMAICA BOTANICAL DEPARTMENT. A set of the publications of the department.

Gifts to the Library.

JONES, LEW. McKim, W. D. Heredity and Human Progress. New York, 1900. O.
JUSSON, A. B. Four of his recent publications.
KANSAS STATE HISTORICAL SOCIETY. Transactions, 1897-1900. Topeka, 1900. O.
KODAIKANAL AND MADRAS OBSERVATORIES. Report for 1899-1900. F.
LAVAL UNIVERSITY. Academic publications for the year.
LICALDANO, N. and E. (Editors.) Piastone nell' academia. Musaico Pompeiano, Napoli, 1900. F.
LEIPZIG, UNIVERSITY OF. One hundred and seventy-seven academic publications.
LEVASSOR, E. (Author.) Trente-deux ans d'enseignement au Collège de France. Paris, 1900. O.
LEVIES, C. (Author.) A Grammar of the Aramaic Idiom. Cincinnati, 1900. O.
LEYDEN, UNIVERSITY OF. Thirty-two academic publications.
LICK OBSERVATORY. Publications for 1900. Sacramento, 1900. Q.
LIEGE, UNIVERSITY OF. Academic publications for the year.
LILLE, UNIVERSITY OF. Forty-eight academic publications.
LIVERPOOL, BIOLOGICAL SOCIETY. Proceedings and Transactions. Liverpool, 1899. O.
LOTSY, J. j. (Author.) Balanophora Globose Jung. Leide, 1899. Q.
Physiologische proeven genomen met cinchona succirubra, I. Batavia, 1899. Q.
LOUBAT, DUC DE. Il manoscritto Messicano Vaticano 3738, detto Il codice Rios. Roma, 1900. F.
LOUBIANA HISTORICAL SOCIETY. Publications. New Orleans. 3 vols. 1899-1900. O.
LOUVAIN, UNIVERSITY OF. Twelve academic publications.
LUND, UNIVERSITY OF. Twenty-three academic publications.
LYONS, UNIVERSITY OF. Two hundred and twelve academic publications.
MACDONALD, A. Twelve of his recent publications.
MCLANE, J. L. Two hundred and ninety-four volumes, including a full set of the Congressional Globe and Record and other official publications.
MARBURG, T. (Author.) Expansion. Baltimore, 1900. S.
Books in physics (see p. 95).
MARSILLES, FACULTÉ DES SCIENCES. Annales. Vol. 10. Q.
MARSILLES, MUSEUM OF NATURAL HISTORY. Annales. 2 vols. Marselles, 1899. F.
MARYLAND HISTORICAL SOCIETY. Publications for the year.
MARUYAMA, (COUNTY) M. (Author.) Report on the adoption of the gold standard in Japan. Tokio, 1900. Q.
CURS, C. O. Beitrag zur Kenntnis des inneren Raumes der Ascidien. Q.
MEXICO, GEOLOGICAL INSTITUTE. Boletín. Mexico, 1899. F.
MEXICO (SECRETARIA DE FOMENTO, ETC.) Boletín. Mexico, 1889-99. 10 vols. O.
MAYER, G. (Author.) Germanic Dialects. Westerville, 1900. O.
MICHAEL, A. (Author.) Ueber einige Gesetze und deren Anwendung in der organischen Chemie. Leipzig, 1899. O.
MONTevideo, UNIVERSITY OF. Annales. Montevideo, 1899. O.
MONTPELLIER, UNIVERSITY OF. One hundred and fifty-four academic publications.
MOORE, C. B. (Author.) Certain Antiquities of the Florida West Coast. Phila., 1900. F.
MORSE, E. S. (Author.) A Bubble-blowing Insect. 1900. O.
Five of his recent publications. London, 1900. O.
Gifts to the Library.

MUSÉE TEYLER. Archives. Haarlem, 1900. O.

MUSEUM ARNOLDT W. (Author.) Urim und Thummim. Chicago, 1900. O.

NANCY, UNIVERSITY OF. Seventy-five academic publications.


NEWELL, L. C. (Author.) Experimental Chemistry. Boston, 1900. D.

NEWHALL, B. (Author.) Socrates and Christ. 1899. O.

 Nietzsche, M. von. (Author.) Beiträge zur Syphilis-forschung; articles pour l'investigation de la syphilis, I, 1900. Q.

NIBERT, M. (Author.) Multi-homogeneous Theorem. 1899. O.

NOHLE, C. P. (Author.) Five of his recent publications.

NORTH CAROLINA, UNIVERSITY OF. James Sprunt Historical Monographs. Chapel Hill, 1900. O.

NORTHERN INDIANA HISTORICAL SOCIETY. Howard, T. E. The Indiana Supreme Court. 1900.


Bonneville, K. Hydroidea. Christiania, 1899. F.

OHIO ARCHAELOGICAL AND HISTORICAL SOCIETY. Quarterly. Columbus, 1900. O.


ORMOND, A. F. (Editor.) Princeton Contributions to Philosophy. Princeton, 1900. O.

OTT, L. (Author.) Contributions to the Physiology and Pathology of the Nervous System. 1899-1900. O.

PALMER, C. S. (Author.) Outlines of the Theoretical Chemistry of Copper. 1900. O.

PARK, W. The Holy Bible, Revised Version with references. New York. 1898. O.


International Exhibition, Paris, 1900. Official Catalogue, Exhibition of the German Empire. O.

La ville de Kristiania: son commerce, sa navigation et son industrie. Kristiania, 1900. O.

SAETREN, G. Les rivieres de la Norvège. Christiania, 1900. O.

PARIS, UNIVERSITY OF. Six hundred and seventy academic publications.

PASCHEN, F. AND TAYLOR, C. F. Parsons, F. The City for the People. Thila. O.

PEABODY EDUCATION FUND. Proceedings. Vol. 5. Cambridge, 1900. O.

PENNSYLVANIA-GERMAN SOCIETY. Transactions. 1899. O.

PEPPER, G. H. (Author.) Hyde Expedition. Ceremonial Deposits found in an Ancient Pueblo Estafa in Northern New Mexico. New York, 1899. Q.

PHILADELPHIA COMMERCIAL MUSEUM. Publications. 5 vols. O. and Q.

POCHHAMMER, L. Eleven of his mathematical publications. O.

POTTEN, UNIVERSITY OF. Twenty-five academic publications.

PORTER, J. G. (Author.) Catalogue of Proper Motion Stars. Cincinnati, 1892-8. Q.

POTSDAM, ASTROPHYSIKALISCHES OBSERVATORIUM. Grosser Refractor des Astrophysikalischen Observatorium zu Potsdam.

PRESLEY, P. L. (Author.) Union Theological Seminary in the City of New York. 1900. O.
Gifts to the Library.

PRINCETON UNIVERSITY. Reprint of Educational Charts prepared for the Exhibit of Princeton University at the Paris Exposition of 1900. Princeton, 1900. F.

PROVIDENCE RECORD COMMISSIONERS. Early Records of the Town of Providence, Providence, 1899. O.


PUTNAM, E. K. (Author.) The Lambeth Version of Havelock. Baltimore, 1900. O.


QUINET, (MADAME) E. (Author.) Twenty volumes of the works of Edgar Quinet.

RANDOLPH, C. F. (Author.) Notes on the Law of Territorial Expansion. O.

RIEMANN, I. A. A number of chemical books.

Rennert, H. A. (Author.) Macias, O Nomorado. Phila., 1900. Q.

Revues, UNIVERSITY OF. Eighteen academic publications.

RHODE ISLAND HISTORICAL SOCIETY. Publications. Providence, 1900. 2 vols. O.

RIO DE JANEIRO, OBSERVATORY OF. Methods for determining the hours of occultations of the stars by the Lisa. Rio de Janeiro, 1899. F.

ROMANIA, METEOROLOGICAL INSTITUTE. Bulletins, 1899-1900. 3 vols. F.


ST. STEPHEN'S COLLEGE. Inaugural Address of Rev. Lawrence F. Cole. O.

SAWYER, J. (Author.) Contributions to Practical Medicine. 2d ed. Birmingham, 1891. D.

SCHNEIDER, E. Books for the German Seminary collection (see p. 96).

SCRIPTURE, E. W. (Editor.) Studies from the Yale Psychological Laboratory. New Haven, 1899. O.

SHINEL, O. H. (Author.) Currency Reform. 1900. O.

SMILY, A. K. Lake Mohonk Conference on International Arbitration, 1899. O.

SMITH, C. MICHEE. (Author.) Results of the Observations of the Fixed Stars made with the Madras Meridian circle. Madras, 1899. F.

SMITH, J. DONFEL. (Author.) Enumeratio Plantarum Guatemalensis, part V. Ouvrages, 1892. O.

SMITH, K. F. Musa Pedestris, collected and annotated by J. L. Farmer. 1896. 0.


Tibullus. Opera, ed. J. Broukhusius. Amstelaedami, 1708. O.


SOUTH AFRICAN PHILOSOPHICAL SOCIETY. Transactions. Cape Town, 1899. Q.


SPARKHUIZ, K. (Author.) Wie dinket euch um Christo wess Sohn ist er? Hannover, 1900. O.

SPENCER, W. W. The continuation of the set of the Jesuit Relations.

STALLARD, J. H. (Author.) Three of his recent publications.


STRASER, DR. H. (Author.) Das neue Anatomeische Institut in Bern. Wiesbaden, 1900. Q.

STRAUG, A. H. (Author.) Christ in Creation and Ethical Morism. Phila., 1899. O.

STROM, LEOPOLD. See p. 96 of Librarian's Report.

STUBBS, W. C. Preliminary report of the geology of Louisiana. O.

SUGARZ, GAMBOA, R. La Histerectomia. Mexico, 1899. Q.

SYMINGTON, MRS. W. N. Two hundred and fifty-four volumes in the subjects of mining. 4to. From the library of William N. Symington. (See p. 96).

TENEMENT HOUSE COMMISSION, NEW YORK. Veiller, L. Tenement House Reform. New York, 1900. O.

TIERMAN, C. B. The Tiernan Family in Maryland. Baltimore, 1898. O.
Gifts to the Library.

TOULOUSE, UNIVERSITY OF. One hundred and twenty-seven academic publications.

TREKASE, W. (Author.) The classification of botanical publications. 1899. O.

TUBINGEN, UNIVERSITY OF. Seventy-five academic publications.

TULANE UNIVERSITY; Memorial service in honor of William Preston Johnston. Q.

UNION LEAGUE CLUB (CHICAGO). Exercises in commemoration of the Birthday of Washington. Chicago, 1900. O.

UNION LOGARITHMICA AMERICANA. Masselin, A. Formulario Logaritmico. Mexico.


UTRECHT, UNIVERSITY OF. Thirty-five academic publications.

VASSAR COLLEGE OBSERVATORY. Publications. Poughkeepsie, 1900. O.

VERMONT, UNIVERSITY OF. Contributions to the Botany of Vermont. 1898-99. O.

VICTORIA UNIVERSITY (ENGLAND). Five academic publications. Manchester. O.

VOLTA BUREAU. Helen Keller Souvenir. 1892-99. Washington. Q.


WELCH, (MRS.) W. W. John Sedgwick, Major-General. 1899. O.

WEST VIRGINIA HISTORICAL AND ANTIQUARIAN SOCIETY. Reports. 1900. O.

WHEELER, B. L. (Author.) Dionysos and Immortality. Boston, 1899. D.

WINCHELL, N. H. Final reports of the Geological and Natural History Survey of Minnesota. 1899. O. and F.


Political Economy of Natural Law. 4th ed. Boston, 1899. D.

WOOSTER, UNIVERSITY OF. Addresses at the Induction of President Holden, Nov. 9, 1899. O.

WÜRZBURG, UNIVERSITY OF. Academic publications for the year.

YALE UNIVERSITY LIBRARY. Academic publications for the year.

Reports and other current publications have been received from the societies and institutions named below. This does not include catalogues, etc., received in regular exchange.

Alabama Historical Society; American Association for the Advancement of Science; American Bible Society; American Board of Commissioners for Foreign Missions; American Dermatological Society; American Historical Association; American Humane Association; American Institute of Mining Engineers; American Museum of Natural History; American Orthopedic Association; American Society of Heating and Ventilating Engineers; Baltimore Chamber of Commerce; Baltimore Health Department; Baltimore Presbyterian Eye, Ear and Throat Hospital; Boston Board of Overseers for the Poor; Boston City Auditor; Boston Department of Municipal Statistics; Boston Museum of Fine Arts; Boston Public Library; Boston School Committee; Bowdoin College; Brooklyn Library; Buffalo Public Library; Buffalo Society of Natural Science; California, University of; Cambridge (Mass.) Public Library; Carnegie Library of Allegheny; City Board of Education; Chicago Public Library; Cincinnati Chamber of Commerce; Cincinnati Museum Association; Cincinnati Public Library; Cincinnati, University of; Citizens Association of Chicago; Cleveland Public Library; Colby University; Columbus Public School Library; Committee on Canals of New York State; Connecticut Agricultural Experiment Station; Connecticut Bureau of Labor Statistics; Davenport Academy of Natural Science; Dayton Public Library and Museum; District of Columbia Health Officer; District of Columbia Public Library; Drexel Institute; Edinburgh University; Enoch Pratt Free Library; Fairmount Park Association; Forbes Library; Franklin and Marshall College; Friends' Free Library (Germantown, Pa.); Glasgow University; Hamilton Association; Harvard University; Harverford College; Hawaiian Islands, Department of Foreign Affairs; Hawaiian Evangelical Association; Hebrew Technical Institute; Illinois Bureau of Labor Statistics; Illinois State Board of Live Stock Commissioners; Illinois State Laboratory of Natural History; Indian Rights Association; Indiana State Medical Society; Iowa Academy of Sciences;
Gifts to the Library.

Iowa Board of Control of State Institutions; Jersey City Free Public Library; Jewish Hospital Association of Philadelphia; John Crear Library; Library of Congress; Los Angeles Public Library; Madras Observatory; Maryland Agricultural Experiment Station; Maryland Land Office; Maryland School for the Deaf and Dumb; Massachusetts Agricultural College; Massachusetts Board of Education; Massachusetts Board of Gas and Electric Light Commissioners; Massachusetts Board of Railroad Commissioners; Massachusetts Bureau of Statistics of Labor; Massachusetts Institute of Technology; Massachusetts Record Commissioners; Massachusetts State Board of Charity; Massachusetts State Board of Health; Massachusetts State Board of Insanity; Metropolitan Museum of Art (New York); Metropolitan Water Board (Boston); Michigan Bureau of Labor Statistics; Michigan Superintendent of Public Instruction; Michigan, University of; Milwaukee Board of City Service Commissioners; Milwaukee Public Museum; Missouri Public Museum; Missouri Botanical Garden; National Civil Service Reform Association; National Educational Association; National Homeopathic Association; Newark Free Public Library; New Bedford Public Library; Newberry Library; New England Conference of Educational Workers; New England Society in New York; New Hampshire State Library; New Haven Colony Historical Society; New Jersey Bureau of Statistics of Labor; New South Wales Public Library; Newton Free Library; New York Academy of Sciences; New York City Board of Education; New York City Charity Organization Society; New York City Comptroller; New York City General Society of Mechanics and Tradesmen; New York City Young Men's Christian Association; New York Civil Service Reform Association; New York Free Circulating Library; New York Infirmary for Women and Children; New York Meteorological Observatory; New York Mutual Life Insurance Company; New York Society for the Relief of the Ruptured and Crippled; New York State Board of Mediation and Arbitration; New York State Bureau of Labor Statistics; New York State Charities Aid Association; North Carolina Agricultural Experiment Station; Northwestern University; Nova Scotian Institute of Science; Ohio Chief Inspector of Mines; Ohio State Board of Charities; Ohio State University; Ontario Department of Agriculture; Panjab University; Peabody Institute; Peace Society (London); Pennsylvania Historical Society; Pennsylvania State Library; Perkins Institution; Philadelphia College of Physicians; Philadelphia Free Library; Philadelphia Library Company; Philadelphia Mercantile Library Company; Pratt Institute Free Library; Princeton Theological Seminary; Providence Athenaeum; Providence Public Library; Queensland Department of Agriculture; Rhode Island Bureau of Industrial Statistics; Rochester, University of; St. Andrews University; St. Louis Merchants' Exchange; St. Mary's Industrial School for Boys; Salem Public Library; San Francisco Board of Supervisors; Scarritt Bible and Training School; Society for the History of the Germans; Springfield City Library Association; Stavanger Museum; Stuttgart Royal School of Technology; Syracuse Central Library; Touro Infirmary; Union of American Hebrew Congregations; Union Club (New York); U. S. Naval Academy (Annapolis); University Settlement Society of New York; Utica State Hospital; Victoria Department of Mines; Victoria Geological Survey; Victoria Public Library; Wellesley Chemical Research Laboratories; Western Reserve University; West Virginia Historical Society; Williams College Library; Wisconsin State Historical Society; Worcester Free Public Library; Yates Laboratories.

The University is indebted, as in previous years, for many and valuable gifts from the several governmental departments in Washington.
THE JOHNS HOPKINS MEDICAL SCHOOL.

REPORT OF THE DEAN.

1899-1900.
REPORT OF THE DEAN OF THE JOHNS HOPKINS MEDICAL SCHOOL.

TO THE PRESIDENT:

I am glad to be able to report that the new building provided by the foresight of the trustees has proved most satisfactory, not only in giving better laboratories and more ample opportunities for work, but also in adding greatly to the physical comfort of the students. The library, the special room for women students, the general post office and cloak-room for the use of students, the bicycle hall and other conveniences have been freely used and very much appreciated. During the last year the grounds around the building have been graded and seeded, adding greatly to the attractiveness of the surroundings. A portion of the grounds has been laid out in tennis courts to give students an opportunity for healthful exercise. The expenses connected with this last improvement were met partly by a generous contribution from some of the members of the Faculty. If I may be permitted to make the suggestion, there seems to be a need also for an apartment house or dormitory for the use of students, as the living quarters in the immediate neighborhood of the Medical School and Hospital are deficient in many respects, particularly perhaps in their hygienic conditions. The new building has also enabled us to transact conveniently most of the business matters of the School in connection with the Dean's office.

The total enrolment of undergraduate students during this year was 211, as compared with 197 the preceding year. Of this number 35 were women. The number of women students in the Medical School has varied quite irregularly during the past seven years, not showing any constant tendency toward an increase, as is indicated by the subjoined table:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total in the Entering Class</th>
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<tbody>
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<td>1896-1897</td>
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<td>64</td>
<td>6</td>
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<tr>
<td>1899-1900</td>
<td>52</td>
<td>7</td>
</tr>
</tbody>
</table>
The total enrolment of graduate students was 91, as compared with 66 in the preceding year. Sixty-nine of these graduate students attended the special courses given to graduates during the months of May and June (1900), while 22 carried on their work at other times during the year.

Our undergraduate courses leading up to the degree of M. D. were given as heretofore with no essential changes. The details of these courses are described in the Medical Announcement and need not be summarized here.

The work done by the students continues to be very satisfactory. Our high grade of entrance requirements furnishes us a picked body of students, and reports from all the teachers testify in the most gratifying way to their enthusiasm and earnestness. We have had no serious matters of discipline to consider. An interesting indication of the excellent spirit of work characterizing our students as a whole is found in the number of special papers published by them, as the result of researches carried on in the various laboratories or in the hospital. A complete list of these papers and of the publications of the staff of the Medical School for the past year will be given in the forthcoming issue of the annual Announcement.

At the Commencement exercises, June 12, 1900, 43 students of the senior class were graduated with the degree of M. D. In making the recommendations from this class for the twelve hospital appointments annually awarded, it was necessary to make a selection from the first twenty-one members, as a number of those who would have been entitled to the recommendation had accepted positions elsewhere. The names of those who were eligible to appointments in the Hospital are as follows:


Of this list the following had announced their intention of accepting positions elsewhere:

L. Brown, Saranac Lake, N. Y.; J. M. Flint, Associate in Anatomy, University of Chicago; A. S. Chittenden, New York Hospital; H. A. Christian, Assistant in Pathology, City Hospital, Boston; W. P. Healy, City Hospital, Blackwell's Island, N. Y.; A. W. Hewlett, New York Hospital; P. Kyes, Instructor in Anatomy, Rush Medical College, Chicago; W. H. Lewis, Assistant in Anatomy, Johns Hopkins Medical School; J. B. MacCallum, Assistant in Anatomy, Johns Hopkins Medical School.

During the year a number of changes have occurred in the list of instructors. Dr. L. F. Barker, Associate Professor of Pathology, accepted the position of Professor of Anatomy in the University of Chicago; Dr. G. P. Dreyer, Associate Professor of Physiology, accepted the position of Professor of Physiology in the medical department of the University of Illinois; Dr. O. G. Ramsay, Associate in Gynecology, became Professor of Gynecology in the medical department of Yale University; Dr. J. W. Lord accepted
the position of Associate Professor of Anatomy in the Baltimore Medical College, and Dr. G. W. Dobbin, Associate in Obstetrics, that of Professor of Obstetrics in the College of Physicians and Surgeons of Baltimore, although still retaining their connection with our School. Dr. J. W. Lazear, Assistant in Clinical Microscopy, accepted an appointment as Assistant Surgeon, U. S. Army; Dr. N. B. Gwyn, Demonstrator in Clinical Microscopy, received an appointment in Philadelphia. Dr. A. C. Crawford, Assistant in Pharmacology, and Mr. J. L. Walz, Assistant in Pharmacy, resigned their positions. Dr. J. W. Lord resigned his position as Instructor in Anatomy.

The following promotions and appointments were made during the year:

Dr. W. W. Russell was promoted from Associate in Gynecology to Associate Professor of Gynecology; Dr. T. S. Cullen was promoted from Associate in Gynecology to Associate Professor of Gynecology; Dr. Reid Hunt was promoted from Associate in Pharmacology to Associate Professor of Pharmacology; Dr. W. G. MacCallum was promoted from Assistant to Associate in Pathology, and Dr. N. M. Harris from Assistant to Associate in Bacteriology. Dr. P. M. Dawson was promoted from Assistant to Instructor in Physiology; Dr. E. L. Opie was promoted from Assistant to Instructor in Pathology; Dr. M. T. Sudler was promoted from Assistant to Instructor in Anatomy. Dr. George Walker was appointed Instructor in Surgery; Dr. J. Erlanger was appointed Assistant in Physiology; Dr. F. W. Lynch was appointed Assistant in Obstetrics; Dr. H. T. Marshall was appointed Assistant in Pathology; Drs. J. B. MacCallum and W. H. Lewis were appointed Assistants in Anatomy; Dr. C. P. Emerson was appointed Assistant in Medicine; Dr. W. S. Baer was appointed Assistant in Orthopaedic Surgery, and Dr. H. W. Buckler Assistant in Obstetrics.

In accordance with our custom special courses of lectures were given to the members of the third and fourth year classes. These lectures are intended to supplement the regular undergraduate instruction. The series of the past year was arranged as follows: Ten lectures by Dr. A. C. Abbott, of the University of Pennsylvania, on Hygiene; ten lectures by Dr. Robert Fletcher on Forensic Medicine; ten lectures by Dr. C. W. Stiles, with accompanying laboratory exercises, on Medical Zoology; and three lectures by Dr. J. S. Billings on the History of Medicine. It seems very desirable that some means should be found to enlarge the scope of the instruction given in Hygiene.

The Journal of Experimental Medicine, in the success and support of which the Medical School is so deeply interested, has now advanced to its fifth volume, and has become one of the widely recognized means of publication on the scientific side of medicine.

It is gratifying to recall that several members of the Medical Faculty received during the year honorary degrees from other institutions of learning. Dr. Welch was honored by Harvard University with the degree of LL. D., Dr. Halsted received an election as an honorary Fellow of the
Royal College of Surgeons in London, and Dr. Mall received the degree of A.M. from the University of Michigan.

I take great pleasure in calling attention also to the noteworthy tribute paid to Dr. Welch by his present and former pupils upon the twenty-fifth anniversary of his receiving the degree of M.D. This anniversary was commemorated by the publication of a memorial volume, entitled "Contributions to the Science of Medicine," which was presented to Dr. Welch on the occasion of a complimentary dinner, May 4, 1900. The volume contains thirty-eight original contributions upon various subjects, many of them of unusual interest and some very beautifully illustrated. In the character of the work represented in it, and in the number and distribution of its contributions, the volume makes, perhaps, the most honorable testimonial ever presented to a teacher in this country.

It is my sad duty to announce the death of two of the former members of the Medical School. Dr. J. W. Lazear, formerly Assistant in Clinical Microscopy, afterwards Assistant Surgeon in the U. S. Army, died of yellow fever, September 25, 1900, while engaged as a member of a special commission, appointed by the Surgeon-General, to study this disease. His untimely death was most deeply regretted by his former colleagues. Mr. B. B. Kauffman, who would have been in our present senior class, met with an accidental death during the summer of 1900.

Respectfully submitted,

W. H. Howell,
Dean.
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TWENTY-SIXTH

ANNUAL REPORT

OF THE PRESIDENT OF THE

Johns Hopkins University

Baltimore, Maryland

1901

Baltimore
The Johns Hopkins Press
1901
TRUSTEES.
1901-1902.

President:
JAMES L. McLANE.

Treasurer:
FRANCIS WHITE.

Secretary:
LEWIS N. HOPKINS.

Members of the Board.

LEWIS N. HOPKINS,  
FRANCIS WHITE,  
JAMES L. McLANE,  
W. GRAHAM BOWDOIN,  
WILLIAM T. DIXON,

ARTHUR GEORGE BROWN,  
EUGENE LEVERING,  
RICHARD M. VENABLE,  
JOHN GILL OF R,

THE PRESIDENT OF THE UNIVERSITY, ex officio.

COMMITTEES.

Executive Committee:

ARTHUR GEORGE BROWN,  
FRANCIS WHITE,  
The President of the University, ex officio.

Finance Committee:

FRANCIS WHITE,  
W. GRAHAM BOWDOIN,  
JAMES L. McLANE, ex officio.

Building Committee:

JAMES L. McLANE, ex officio,  
WILLIAM T. DIXON,  
LEWIS N. HOPKINS,  
RICHARD M. VENABLE.
REPORT.

To the Honorable Board of Trustees
of the Johns Hopkins University:—

Gentlemen:

I have the honor to present my twenty-sixth annual report, which I am sorry to say will be my last. On the twenty-second of February, 1901, my resignation was formally accepted, to take effect at the close of the academic year; and on the third day of June, Professor Ira Remsen, M. D., Ph. D., LL.D., who has been at the head of the chemical laboratory since it was opened in 1876, and has been one of the most devoted, successful, and influential members of the faculty from the very beginning, was elected President. With the utmost confidence in his ability, devotion, and integrity, I yield to him the cares and responsibilities of an office which I have held for more than a quarter of a century. Allow me to add, that with great regret I give up the duties and honors of this station, for notwithstanding some serious disappointments and some great bereavements, the work of the
University has gone forward steadily, since 1876, on the lines originally proposed, and it is pleasant to believe that it has had a considerable amount of influence upon the advancement of knowledge and upon the methods of higher education in different parts of our land.

Some months ago it was decided to celebrate the twenty-five years which have passed since instruction began, by an assembly of our graduates, and by a consideration of the various activities of the University during this initial period. It was also proposed to mark the beginning of a new administration by a formal inauguration of the President. Such an announcement was therefore made by the authority of the Trustees in the public assembly of Commemoration Day. As the election of a president and his acceptance of the office were not actually determined until a few days before the close of the current session, Professor Remsen expressed a desire to have his inauguration take place on the twenty-second of February, 1902. The committee of arrangements, who had already begun to develop their plans for an historic celebration in October, then reached the conclusion that it would be better to postpone all festive ceremonies until that time. The Trustees concurred in this view, and accordingly the twenty-second of February, 1902, now stands as the date for reviewing the past and looking forward to the future. It is too soon to say in just what way this plan will be carried out.
Statistics.

The usual statistics, prepared, as in former years, by the Registrar, Mr. T. R. Ball, will next be given.

The academic staff numbered during the year one hundred and forty-three teachers, including fifty-eight professors and instructors in the Johns Hopkins Medical School. The number of students enrolled was six hundred and fifty-one, of whom two hundred and seventy were residents of Maryland, three hundred and sixty-four came here from forty-one other States of the Union, and seventeen from foreign countries. Among the students were four hundred and seventy-three already graduated, one hundred and sixty-eight of whom were enrolled in the department of Philosophy and the Arts, three hundred and five in the Medical Department. They came from one hundred and seventy-four colleges and universities. There were one hundred and fifty-eight matriculates (or candidates for the degree of Bachelor of Arts), and twenty were admitted as special students, to pursue courses of study for which they seemed fitted, without reference to graduation. The degree of Bachelor of Arts was conferred upon forty-one candidates, the degree of Doctor of Medicine upon fifty-three, and thirty were promoted to the degree of Doctor of Philosophy.

The first table indicates the enrolment of students in each year since the University was opened in the autumn of 1876:—
## Statistics

<table>
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<th>Year</th>
<th>Total Enrolled</th>
<th>Graduates, (incl. Fellows.)</th>
<th>Matriculates</th>
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During twenty-five years, four thousand and eighty-nine individuals have been enrolled as students, of whom sixteen hundred and seventeen are registered as from Maryland (including twelve hundred and ninety-eight from Baltimore), and two thousand four hundred and seventy-two from sixty-nine other States and countries. Two thousand five hundred and ninety persons entered as graduate students, and fourteen hundred and ninety-nine entered as undergraduates. Of the undergraduates, three hundred and eighty-three have con-
continued as graduate students, many of them proceeding to the degree of Doctor of Philosophy. It thus appears that two thousand nine hundred and seventy-three persons have followed graduate studies here.

The following table indicates the geographical distribution of the students each year since the opening, as shown by the Annual Registers:

<table>
<thead>
<tr>
<th>Year</th>
<th>Of Maryland</th>
<th>Not of Md.</th>
<th>Of Maryland</th>
<th>Not of Md.</th>
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<tr>
<td>1876-77</td>
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</tr>
<tr>
<td>1880-81</td>
<td>95</td>
<td>81</td>
<td>1892-93</td>
<td>266</td>
</tr>
<tr>
<td>1881-82</td>
<td>97</td>
<td>73</td>
<td>1893-94</td>
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<td>1882-83</td>
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<td>93</td>
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<td>260</td>
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<td>1883-84</td>
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<td>1895-96</td>
<td>272</td>
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<td>1884-85</td>
<td>130</td>
<td>160</td>
<td>1896-97</td>
<td>254</td>
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<td>1885-86</td>
<td>130</td>
<td>184</td>
<td>1897-98</td>
<td>279</td>
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<tr>
<td>1886-87</td>
<td>162</td>
<td>216</td>
<td>1898-99</td>
<td>372</td>
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<tr>
<td>1887-88</td>
<td>199</td>
<td>221</td>
<td>1899-1900</td>
<td>262</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1900-01</td>
<td>270</td>
</tr>
</tbody>
</table>

The attendance upon the courses given in some of the principal subjects has been as follows during the last five years:

<table>
<thead>
<tr>
<th>Subject</th>
<th>1896-97</th>
<th>1897-98</th>
<th>1898-99</th>
<th>1899-1900</th>
<th>1900-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics and Astronomy</td>
<td>78</td>
<td>85</td>
<td>79</td>
<td>60</td>
<td>49</td>
</tr>
<tr>
<td>Physics</td>
<td>115</td>
<td>101</td>
<td>94</td>
<td>91</td>
<td>84</td>
</tr>
<tr>
<td>Chemistry</td>
<td>117</td>
<td>139</td>
<td>118</td>
<td>116</td>
<td>121</td>
</tr>
<tr>
<td>Geology and Mineralogy</td>
<td>26</td>
<td>39</td>
<td>34</td>
<td>31</td>
<td>27</td>
</tr>
<tr>
<td>Biology</td>
<td>141</td>
<td>156</td>
<td>178</td>
<td>154</td>
<td>144</td>
</tr>
<tr>
<td>Pathology and Bacteriology</td>
<td>38</td>
<td>39</td>
<td>21</td>
<td>20</td>
<td>36</td>
</tr>
<tr>
<td>Greek</td>
<td>42</td>
<td>45</td>
<td>47</td>
<td>38</td>
<td>28</td>
</tr>
<tr>
<td>Latin</td>
<td>76</td>
<td>73</td>
<td>71</td>
<td>67</td>
<td>56</td>
</tr>
<tr>
<td>Sanskrit, etc.</td>
<td>34</td>
<td>40</td>
<td>33</td>
<td>38</td>
<td>29</td>
</tr>
<tr>
<td>Semitic Languages</td>
<td>23</td>
<td>35</td>
<td>31</td>
<td>31</td>
<td>23</td>
</tr>
<tr>
<td>German</td>
<td>139</td>
<td>170</td>
<td>125</td>
<td>121</td>
<td>111</td>
</tr>
<tr>
<td>French, Italian, etc.</td>
<td>109</td>
<td>79</td>
<td>87</td>
<td>90</td>
<td>89</td>
</tr>
<tr>
<td>English, etc.</td>
<td>122</td>
<td>132</td>
<td>142</td>
<td>160</td>
<td>144</td>
</tr>
<tr>
<td>History and Political Science</td>
<td>116</td>
<td>129</td>
<td>123</td>
<td>121</td>
<td>126</td>
</tr>
<tr>
<td>Philosophy</td>
<td>44</td>
<td>61</td>
<td>61</td>
<td>56</td>
<td>49</td>
</tr>
</tbody>
</table>
Since degrees were first conferred, in 1878, seven hundred and seven persons have attained the Baccalaureate degree, five hundred and seventy-nine have been advanced to the degree of Doctor of Philosophy, and one hundred and sixty-six to the degree of Doctor of Medicine, as appears from the following table,—the whole number of individuals graduated being thirteen hundred and thirteen:

<table>
<thead>
<tr>
<th>B.A.</th>
<th>Ph.D.</th>
<th>B.A.</th>
<th>Ph.D.</th>
<th>M.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877-78</td>
<td>0</td>
<td>4</td>
<td>1889-90</td>
<td>37</td>
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<td>1878-79</td>
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<td>6</td>
<td>1890-91</td>
<td>51</td>
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<tr>
<td>1879-80</td>
<td>16</td>
<td>9</td>
<td>1891-92</td>
<td>41</td>
</tr>
<tr>
<td>1880-81</td>
<td>12</td>
<td>5</td>
<td>1892-93</td>
<td>40</td>
</tr>
<tr>
<td>1881-82</td>
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<td>9</td>
<td>1893-94</td>
<td>41</td>
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<td>1882-83</td>
<td>10</td>
<td>6</td>
<td>1894-95</td>
<td>37</td>
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<td>1883-84</td>
<td>23</td>
<td>15</td>
<td>1895-96</td>
<td>37</td>
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<td>1884-85</td>
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<td>1896-97</td>
<td>36</td>
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<td>1885-86</td>
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<td>17</td>
<td>1897-98</td>
<td>49</td>
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<td>1886-87</td>
<td>24</td>
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<td>1898-99</td>
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<td>1887-88</td>
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<td>27</td>
<td>1899-1900</td>
<td>46</td>
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<td>1888-89</td>
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<td>20</td>
<td>1900-01</td>
<td>41</td>
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<td></td>
<td></td>
<td>707</td>
</tr>
</tbody>
</table>

Certificates of proficiency in applied electricity were awarded to ninety persons from 1889 to 1899.

The following table indicates the enrolment of students in the Medical School since its opening in October, 1893:

<table>
<thead>
<tr>
<th>Candidates for the Degree of M. D.</th>
<th>Doctors of Medicine</th>
<th>Total Enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1893-94</td>
<td>13</td>
<td>65</td>
</tr>
<tr>
<td>1894-95</td>
<td>51</td>
<td>76</td>
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<td>1895-96</td>
<td>84</td>
<td>69</td>
</tr>
<tr>
<td>1896-97</td>
<td>123</td>
<td>11*</td>
</tr>
<tr>
<td>1897-98</td>
<td>167</td>
<td>74</td>
</tr>
<tr>
<td>1898-99</td>
<td>197</td>
<td>55</td>
</tr>
<tr>
<td>1899-1900</td>
<td>211</td>
<td>73</td>
</tr>
<tr>
<td>1900-01</td>
<td>209</td>
<td>96</td>
</tr>
</tbody>
</table>

* Beginning with 1897 the courses offered to Doctors of Medicine have been given in May and June, after the compilation of the Register, and those in attendance are now counted in the enrolment of the succeeding year.
Appointments and Promotions.

APPOINTMENTS AND PROMOTIONS.

The following appointments and promotions have been made for the coming year:

To be a Trustee:
   General John Gill of R.

In the Philosophical Department:

To be Professor of Experimental Physics:
   Robert W. Wood, A. B.

To be Professor of Geological Physics:
   Harry F. Reid, Ph. D.

To be Collegiate Professor of Physics:
   William J. A. Bliss, Ph. D.

To be Associate Professors:
   Edward C. Armstrong, Ph. D., French.
   Duncan S. Johnson, Ph. D., Botany.
   Philip Ogden, Ph. D., French Literature.

To be Associate in Meteorology:
   Oliver L. Fassig, Ph. D.

To be Instructors:
   William B. Huff, Ph. D., Physics.
   William Kurrelmeyer, Ph. D., German.

To be Assistants:
   Caswell Grave, Ph. D., Zoology.
   George C. Martin, Ph. D., Paleontology.

In the Johns Hopkins Medical School:

To be Associate Professors:
   Charles R. Bardeen, Ph. D., Anatomy.
   Thomas B. Futterer, M. B., Medicine.
   Walter Jones, Ph. D., Physiological Chemistry.
   Robert L. Randolph, M. D., Ophthalmology and Otology.
Obituary.

To be Associates:

PERCY M. DAWSON, M. D., Physiology.
H. BARTON JACOBS, M. D., Medicine.
FRANK W. LYNCH, M. D., Obstetrics.
THOMAS MCCRAE, M. B., Medicine.
EUGENE L. OPIE, M. D., Pathology.
STEWART PATON, M. D., Psychiatry.
FRANK R. SMITH, M. D., Medicine.

To be Instructors:

WILLIAM S. BAER, M. D., Orthopaedic Surgery.
THOMAS R. BROWN, M. D., Medicine.
RUFUS I. COLE, M. D., Medicine.
ALFRED R. L. DOHME, Ph. D., Pharmacy.
JOSEPH ERLANGER, M. D., Physiology.
LOUIS P. HAMBURGER, M. D., Medicine.

To be Assistant in Medicine:

J. HALL PLEASANTS, JR., M. D.

Obituary.

We have again to record the encroachments of death. One of the Trustees, Mr. Benjamin F. Newcomer, who had been for seven years a member of the Board, died at his home in Baltimore, March 30, 1901. The estimate of his associates was expressed in the following minute:

Seven years ago, April 2, 1894, Mr. Benjamin F. Newcomer was elected a Trustee of the Johns Hopkins University. In inviting him to become a member of this Board, the Trustees were well aware that he was one of the most responsible men of this community, trusted in all the walks of life, and they also knew him as one of the busiest. It was, therefore, a great encouragement to them when he consented to become their colleague, and to take an active part in the affairs of the university as a Trustee and as a member of the Finance Committee, and for a short period as a member of the Executive Committee.

His quick and clear comprehension of difficult problems was not less remarkable than the soundness of his judgment and the wisdom of his counsel. His words were few, but they were frank and conclusive, and many are they who profited by his advice.

He took pains to conceal his liberality, so that few of his fellow-citizens are aware of the promptness, the friendliness, and the extent of his contri-
Obituary.

butions to public institutions. To the Maryland School for the Blind, of which he was the President, to the Friendly Inn, in which he took a personal interest, to the Mercantile Library, of which he had been an early member, to the Association for Improving the Condition of the Poor, to the Home for Consumptives, and to the public library in Hagerstown, he gave freely and proportionately. Twice he made liberal subscriptions for the maintenance of this university, and he had indicated his willingness to make a much larger contribution toward the proposed endowment.

The Johns Hopkins University will not forget the friend, the adviser, and the benefactor, who has rendered such varied services to this institution and to the community upon which it depends for support. He will be remembered as a man devoted to business who found the time and showed the disposition to advance the education and the charities of this community by his gifts, by his sympathies, by his suggestions, and by his influence.

In the summer recess now about to close, another member of the Board was removed by death. Mr. J. Hall Pleasants, who was elected a Trustee, November 7, 1881, died at his country home near Baltimore, August 20, 1901. His colleagues, when they reassemble, will doubtless place upon the records an appreciation of his work; but I cannot await their action without expressing my respect for his character and ability. For many years he had acted as chairman of two important committees, that upon Building and that upon Finance. Under his direction, the physical laboratory and McCoy Hall were constructed, and he took a prominent part in the negotiations which led to the sale of Clifton. He never regarded his services to the university as a burden; on the contrary it was to him a pleasure to think, plan, and act in the furtherance of our interests. His clear insight, his unquestioned integrity, his unusual frankness made him a trustworthy counsellor. The citizens of Baltimore frequently called him into public service, and in two positions his excellent qualities were conspicuous,—as a member of the constitutional convention and as a member of the committee which was charged with the construction of the city hall. He took
an active part in the promotion of good government, and especially in civil service reform. Infirm health, for some years past, had seriously impaired his activity and compelled his retirement. He bore these deprivations with patience, and never suffered his interest in the welfare of the university to be lessened because of his inability to attend the meetings of his associates. The love of reading was a constant solace; his interest in public affairs was unabated; and he watched the progress of the university, and the changes that are taking place in it, not without anxiety, but with confidence and hope.

On the sixteenth day of April last, Professor Henry A. Rowland, Ph. D., LL. D., professor of physics, and director of the physical laboratory, was taken away from us in the fifty-third year of his age. The funeral was attended, April 18, by the officers and students of the university, who met in McCoy Hall, and, after a brief address* by the President of the university, followed the bier to St. Paul’s Church, where the burial service was read by Rev. Dr. Hodges.

Professor Rowland was elected a professor in this university April 3, 1876, and he spent the following year in visiting European universities and in the prosecution of certain researches in the laboratory at Berlin of which Helmholtz was the head. From his earliest youth he had exhibited extraordinary aptitudes for the investigation of difficult problems, and it was the publication of some of the results which he had reached that led to his selection as one of the original staff of this university. His early death is deeply deplored by those who have known him well,—in our own number, in the city of his residence, among the scientific men of the country, and in the various academies and learned societies.

*Printed in the Appendix.
Obituary.

of Europe which had conferred upon him the honors of membership. Many tributes to his memory have appeared, and some of them were reprinted in the Johns Hopkins University Circulars, No. 152. A more elaborate appreciation of his scientific work may be expected, at the beginning of the approaching term, from President Mendenhall, lately head of the United States Coast Survey, and more recently President of the Worcester Polytechnic Institute.

A meeting of the Faculty was held in McCoy Hall, Saturday, April 27, and tributes were paid to Professor Rowland's memory by the President of the university, Professor Remsen, Professor Reid, Professor Ames, and Professor Welch. The following minute was adopted by the assembly, and the Trustees subsequently expressed their concurrence, and ordered the minute to be made a part of their official record:—

We, the Faculty of the Johns Hopkins University, assembled to do honor to the memory of our late colleague, Professor Rowland, herewith record our appreciation of his genius and his services and our sorrow for his untimely death.

In losing Henry Augustus Rowland we have lost a great light, a great force, a great example. His fame abides and will ever be a precious possession of the University, inseparably connected as it is with the foundation and the growth of the institution, but in the withdrawal of a unique personality and the sudden close of a career of high performance, and, if possible, still higher promise, our collective life has suffered a loss which is as incalculable as genius itself. Rowland's eminence as a physicist is indisputable. There is no danger of an overestimate. The only danger is that we who stood so near him have not taken the full measure of the man as he will appear to after times. Of his manner of work those only who were closely associated with him have a right to speak, and yet even they could only divine the swift processes of his intellect, his marvellous intuitions, and admire with the rest of the world his penetrating vision, his unerring directness in the quest of truth. In every problem he sought the ultimate principle, and the moral lesson of his scientific life is not less impressive to those who were not engaged in his special line of work than it is to those who followed him as pupils follow a master, as fellow workers follow a gifted leader. This directness, this honesty characterized him throughout. He was a man of one piece. There was no affectation in his
manner of living, no sham interest in that which lay outside of his field of work or his personal sympathy. He felt the responsibility of his gifts, the importance of his message, and those who came within the range of his influence owe as much to his singleness of purpose as to the illumination of his intellect.

Yet in paying our tribute to Rowland's high intellectual and moral endowments, we must not overlook the human side of this rare man. In all the intimate relations of life, his fidelity, his devotion and his generosity matched his exalted scientific standard, and those who called him friend, and those who shared the hours of relaxation which lessened the strain of his intense work, will carry with them to the end an affectionate remembrance of the great physicist whose work for the University, for the country, and for the world the annals of scientific research and invention will not suffer to be forgotten.

Resolved, That this minute be transmitted to the Trustees with the request that it form a part of their permanent record, and that a copy be communicated by them to Mrs. Rowland and to the family of our late colleague.

Not long before the death of Professor Rowland, his valuable assistant, Theodore C. Schneider, who had shown extraordinary skill as university mechanician, particularly in the making of the dividing engine and in the ruling of concave gratings, was taken away by death in his fifty-fourth year.

As the year is closing, another sorrow has come upon us, the death of our valued associate, Professor Herbert B. Adams.

His health broke down nearly two years ago, and twice he sought recovery by visiting, in the winter, a more congenial climate in the south,—but he only found temporary relief. Under the burden of failing powers he resigned his professorship in the middle of the winter, and gave to the university his very valuable collection of books and pamphlets, prints and papers, pertaining to American History and Education. The resolutions which were adopted at that time by the Trustees now read as an obituary. Their appreciation of his prolonged and important services is expressed in the following words, which were publicly read in our assembly on the twenty-second of February:—
Obituary.

The services of Professor Herbert B. Adams, Ph. D., LL. D., who by reason of ill health now gives up the Professorship of American and Institutional History, after a continuous residence among us of twenty-five years, will always be remembered with admiration, affection, and gratitude.

His ability as a teacher, an editor, and a promoter of education has given him national distinction, and the books, pamphlets, and pictures which he has collected and given to the university will continually inspire and instruct our students, and will be an enduring memorial of the wide range of his scholarship and sympathies.

Professor Adams was one of the most fertile, versatile, suggestive, and inspiring of teachers. He joined our society, at the beginning, as one of a selected company of twenty Fellows, and his relations to the university were unbroken so long as his health continued. He rose from one position to another until he became the acknowledged head of the department of Historical and Political Science, the Professor of American and Institutional History. Many of the brightest students who have been enrolled on our catalogues chose to follow his courses, and they all stand ready to acknowledge with gratitude the guidance and encouragement received from this enthusiastic teacher.

His services were not restricted to the class-room. As the editor of the historical studies of the Johns Hopkins University, he brought out a very large number of useful contributions to American History. Most of his own writings are contained in this series, the most remarkable being his inquiry into the origin of the public land policy of the United States. As the editor of a series of monographs published by the United States Bureau of Education, he elicited an important series of memoirs upon the progress of education in various States of the union. His Life of Jared Sparks, the historian, for whom he had a high appreciation, should also be mentioned. To the entire country he rendered a much greater
service by initiating the American Historical Association, and by acting as its Secretary until declining powers compelled him to ask release. He was often called upon to lecture before other colleges and to deliver addresses on public occasions. To the principles of university extension he was strongly devoted, and he was one of the earliest to initiate in this country methods of reaching, with definitely organized courses of instruction, classes made up of those who are otherwise unconnected with the higher institutions of learning. The university has had no officer more loyal to its reputation, or more ready to serve it than Professor Adams. He was a faithful friend, an inspiring teacher, a good man. His death occurred at his home in Amherst, Mass., July 30, 1901, in his fifty-second year. By his last will and testament he made the university his residuary legatee.

The death of Doctor Adams was followed within a week by that of one of the colleagues whom he most highly valued, Dr. Sidney Sherwood, Associate Professor of Economics. He died August 5, 1901, at Ballston, Saratoga County, N. Y., his native place, at the age of forty-one.

After graduating at Princeton, Dr. Sherwood studied law, and for a short time was engaged in practice. In 1888 he came to Baltimore as a student, and received the degree of Doctor of Philosophy in 1891. Then, for a short time, he was instructor in finance in the University of Pennsylvania, returning in 1892 to this university, where he became first an associate in economics, and then an associate professor. He was a man of modesty, industry and talents, who endeared himself to all who knew him by the excellence of his character, while he was winning distinction as a thinker and writer in the departments of learning to which he was devoted.
As these pages are passing through the hands of the printer, word has come that one of the most promising and one of the most beloved of the younger instructors, Dr. Morris C. Sutphen, was drowned on the thirty-first day of August. A graduate of Princeton, he came to us in 1894, and, after a short service in Williams College, he returned to Baltimore in 1898, and was promoted to the degree of Doctor of Philosophy in 1899. For the last two years he has been an instructor in Latin, and has given abundant evidence of his scholarship and ability. In his death, at the age of thirty-two, the university has sustained another great loss.

I cannot close this sad record without referring to another death, that of one of the most distinguished graduates of this university, Dr. James Edward Keeler, Director of the Lick Observatory, which occurred in San Francisco, August 10, 1900. A review of his activity has been published by the Popular Science Monthly, November, 1900, and reprinted in the Johns Hopkins University Circulars, No. 149.

PUBLIC LECTURES AND ASSEMBLIES.

In the enforced absence of Professor Adams, several gentlemen connected with other institutions of learning kindly came to Baltimore and supplemented the instructions of the resident staff. All but the first of these courses were opened to the public.

Dr. Frederick Bancroft, of Washington, author of a “Life of William H. Seward,” etc., gave twelve lectures on United States History during the period from 1836 to 1861.

Professor John Bassett Moore, LL. D., of Columbia University, formerly Assistant Secretary of State and later Secretary to the Peace Commission at Paris, gave two lectures on
international questions, his topics being *Our Treaty with Spain* and *Our Policy in the Far East*.

Professor James Schouler, LL. D., of Boston, author of a "History of the United States under the Constitution," delivered four biographical lectures, in continuation of his course begun last year, on the great Founders of the American Republic, his topics being as follows: John and Samuel Adams; James Madison; John Jay and John Marshall; James Monroe.

Poultnye Bigelow, Esq., of New York, gave two lectures on the Establishment and Treatment of Colonies, treating these topics, *Latin Colonization and Dutch Colonization*.

Professor David F. Houston, of the University of Texas, delivered two lectures on *United States History during the period from 1816 to 1835*, touching upon the reorganization of the commercial policy, the protest of the minority, and the nullification movement as a test of the Union—its origin, nature and significance.

Professor James H. Robinson, of Columbia University, gave two lectures on *Petrarch and his fellow scholars* and *Petrarch as seen in his "Confessions."*

The ninth annual course of Turnbull Lectures on *Poetry* was delivered by Hamilton W. Mabie, Litt. D., of New York, one of the editors of The Outlook, and distinguished as a literary critic and essayist. The subject which he took was "Poetry in America." This he treated in seven lectures, of which the special topics were these: *The Making of the Poem; The Poetry of New England; Edgar Allan Poe; The Poetry of the South; The Middle Period; The Poetry of To-day; Significance of American Poetry.*

A course of lectures, for which provision was made by the Maryland Society of Colonial Dames of America, was given
during the early spring by Dr. Charles W. Sommerville, a graduate and a fellow by courtesy of this university, formerly professor in Hampden-Sidney College, Virginia. The course included original and valuable studies of the following noteworthy statesmen of Maryland:

Francis Nicholson, 1660–1728.
Daniel Dulany, 1686–1753.
Daniel Dulany (the Younger), 1721–1797.
John Hanson, 1715–1783.
John Eager Howard, 1752–1827.
Luther Martin, 1748–1826.

A second course, provided by the same generous Society, which is a most efficient agency in promoting the study of the early history of this State and region, will be given during the coming year by Clayton C. Hall, Esq., of Baltimore.

Public lectures, designed for teachers, were given with noteworthy success during the winter, in accordance with the following programme:

1. Education,—eight lectures by Dr. S. E. Forman.
   English History,—seven lectures by Dr. G. C. Lee.
   Shakspeare,—six lectures by Dr. F. H. Sykes, of Philadelphia.
2. Physics,—twenty lectures, with demonstrations, and twenty conferences by Professor Ames.
3. Chemistry,—twenty lectures, with experiments, and twenty conferences by Professor Renouf.
4. Botany,—twenty lectures, with laboratory work, by Dr. D. S. Johnson.
5. Latin (two courses),—twenty lessons for beginners by Dr. M. C. Sutphen; twenty lessons for more advanced students by Dr. H. L. Wilson.
Dr. J. R. Brackett's class lectures on Public Aid, Charity, and Correction were given in the Donovan Room and were also open to the public.

Professor Warren, of Adelbert College, formerly one of our staff, now called to Yale University, has again favored the Romance department with a course of lectures on French literature. Six of these lectures were given in public and treated the following subjects: *J. J. Rousseau and his influence; Chateaubriand; Mme. de Staël; Nodier; Lamartine; Victor Hugo; De Vigny; De Musset; George Sand; A. Dumas père.*

Under the auspices of the Scientific Association of the university, an illustrated lecture on Recent Improvements in Long-Distance Telephony was given by Professor M. I. Pupin, of Columbia University, in McCoy Hall, on the evening of February 13.

A series of lectures on archeological subjects, provided by the Baltimore Society of the Archeological Institute of America, was given in McCoy Hall, in January, February, and March. The lecturers and their subjects were as follows: Professor Louis Dyer, of the University of Oxford, three lectures, on *The Cretan Alphabet, Mycenaean Gems, Old Knossos and the Labyrinth of Minos*; Mr. Howard Crosby Butler, of Princeton University, on *The Deserted Cities of Syria*; Professor Samuel B. Platner, of Western Reserve University, on *Recent Excavations in the Roman Forum*; Professor M. L. D'Oooge, of the University of Michigan, on *Delphi and the French Excavations*.

On the fiftieth birthday of Robert Louis Stevenson, November 13, 1901, his life and works were commemorated by the advanced students of English and their instructors. By the invitation of the President, Mr. Edward L. Burlingame,
Public Lectures and Assemblies. 21

Ph. D., of New York, Editor of Scribner's Monthly, gave an informal account of his personal recollections of the celebrated writer, and read some of his letters. He showed a number of engraved likenesses of Stevenson, which he afterwards presented to the university; also interesting examples of the author's manuscript. Two candidates for the degree of Doctor of Philosophy, George D. Brown and L. Wardlaw Miles, read papers illustrative of Stevenson's characteristics, and Professor Greene, in a short address, described the manner in which he was accustomed to make use of the novelist's writings in his class-room exercises. A number of ladies and gentlemen were present by invitation.

Not long afterwards a likeness of Professor Francis J. Child, of Harvard, was given to us by Professor H. A. Kelly, M. D. It is a medallion, in bronze, modelled by Miss Usher, of Boston. The success of the Stevenson commemoration had been so noteworthy that it was decided to bring together the friends of Professor Child, greatest of all interpreters of Ballads, and recall by short addresses the courses of lectures which he gave in the early years of this university, and especially to consider and review his studies of Chaucer and of Ballads. Papers were read by three advanced students of English, Messrs. G. D. Brown, L. W. Miles, and R. D. Miller, and remarks were made by Professors Elliott and Greene and by Judge Morris, of Baltimore, once pupils of Professor Child. The meeting was held on the twenty-seventh of March.

The annual inter-class debate and contest in public speaking was held in McCoy Hall on the evening of March 21. The question for debate was as follows: "The United States should construct, own, operate, and control an Inter-Oceanic Canal by way of the Nicaragua route." Members of the
Commemoration Day and Commencement.

Junior class took the affirmative side and of the Senior class the negative. The Judges, Messrs. George R. Gaither, Edgar H. Gans, and Eugene Levering, decided that the Seniors presented the best arguments. A trophy given by Professor Adams was awarded to the winning side, and prizes to each of the successful debaters.

The contest in public speaking consisted of recitations by members of the Freshman class, and a prize was awarded to the best speaker. The Judges for this contest were Messrs. Arthur George Brown, William H. Buckler, and Joseph N. Ulman.

The annual meeting of the American Society of Naturalists and the affiliated societies took place in Baltimore during Christmas week. The various sessions were held in McCoy Hall and Levering Hall and in the laboratories of the medical school. A formal reception in McCoy Hall was tendered by the University on the evening of December 27.

Among the other organizations meeting in the rooms of the university in the course of the year, the following may be mentioned:

The Charity Organization Society of Baltimore, the Baltimore Society of the Archaeological Institute of America, the Municipal Art Society of Baltimore, the Baltimore County Teachers' Institute, the Maryland Folk-Lore Society, the Maryland State Federation of Women's Clubs.

Commemoration Day and Commencement.

Commemoration Day, February 22, was observed by the usual assembly of officers and students. The principal address was given by the Hon. David J. Hill, LL. D., Assistant Secretary of State, and formerly the President of the University.
of Rochester. A number of members of the Diplomatic Corps showed their respect for the speaker and their interest in the university by their presence on this occasion. The degree of Doctor of Philosophy was conferred upon four candidates. In the afternoon there was a social assembly in the library, and in the evening the alumni held their annual banquet.

The Commencement exercises were held in the Academy of Music on the eleventh of June, 1901. Diplomas were given to fifty-three Doctors of Medicine, forty-one Bachelors of Arts, and twenty-six Doctors of Philosophy, the candidates being presented respectively by Dean Howell, Dean Griffin, and Professor Smith. The principal address was delivered by Dr. Henry M. Hurd, Professor of Psychiatry and Superintendent of the Johns Hopkins Hospital. The music was rendered on this occasion, as it was on Commemoration day, by an orchestra under the leadership of Mr. E. L. Turnbull (A. B., Johns Hopkins, 1893). In the evening the graduates and their friends were received by the faculty in McCoy Hall.

**MARSHALL PRIZE.**

The John Marshall Prize was awarded on Commencement day to John H. Latané (Ph. D., Johns Hopkins, 1895), as a recognition of the value of his recently published volume entitled "The Diplomatic Relations of the United States and Spanish America."

The previous recipients of this prize are named below:

1892. Henry C. Adams, Ph. D.
1892. Charles H. Levermore, Ph. D.
1892. John M. Vincent, Ph. D.
1892. Woodrow Wilson, Ph. D.
1893. Charles M. Andrews, Ph. D.
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Sylvester Tablet.

1894. Amos G. Warner, Ph. D.
1895. Albert Shaw, Ph. D.
1896. Westel W. Willoughby, Ph. D.
1897. J. Franklin Jameson, Ph. D.
1898. Charles D. Hazen, Ph. D.
1899. Jacob H. Hollander, Ph. D.
1900. James M. Callahan, Ph. D.

Sylvester Tablet.

The Sylvester tablet, modelled by Mr. C. T. Calverley, of New York, was given to us by a few friends of the university to commemorate the work of the distinguished mathematician who was a professor in the Johns Hopkins University from 1876 to 1883. The conditions upon which replicas may be bestowed have not been formulated, but, by the unanimous concurrence of the Faculty and the Trustees, the first two medallions were presented to Lord Kelvin, the renowned physicist of Glasgow, who lectured here some years ago upon light, and Professor Newcomb, who succeeded to the chair of mathematics after the retirement of Professor Sylvester.

Library.

The library has continued to grow under the efficient administration of Mr. Nicholas Murray, who has shown great skill in utilizing the small amount of money that has been placed at his disposal, by the careful selection of important works, by exchanges, and by the encouragement of donations. Among the most noteworthy gifts during the year are these:

The German Ambassador, Baron von Holleben, has informed the Johns Hopkins University that the German Emperor, William II, has presented to the library of the University a copy, handsomely bound, of the splendid edi-
tion of the works of Frederick the Great, published by the Prussian government some years ago under the auspices of the Royal Academy of Sciences of Berlin. These works of Frederick the Great, supposed to be in thirty volumes, have not yet been received by the library, but are expected after the binding has been finished. The gift is made in recognition of the important contributions to biblical literature which have been made by Professor Paul Haupt, once a professor in the University of Göttingen, and now the head of the Oriental Seminary of the Johns Hopkins University. In addition to his study of the Sacred Scriptures, Dr. Haupt has reconstructed with great skill the celebrated tablet of the Deluge found in Mesopotamia many years ago. As a further expression of his appreciation of the scholarship of Professor Haupt, the German Emperor bestows upon him the Prussian Order of the Red Eagle of the Fourth Class.

Several Egyptian Papyri, which were lately discovered by Messrs. Grenfell and Hunt at the town of Oxyrhyncus, in Egypt, have recently been presented by the Egypt Exploration Fund. They date from the first, second, and third centuries, and include fragments of Thucydides and Demosthenes.

Professor Adams has given to the university his private library, including books, pamphlets, and pictures. The collection is the working library of a professor of history. It contains standard works upon the history of the modern nations, and a large number of books upon Hebrew and early Christian history. It cannot be said that one department of literature predominates strongly over another, but the collection of books, pamphlets, and documents on the history of education is particularly fine. The collection includes com-
plete sets of his own writings and books which he has edited, and also the works of graduates and former members of the historical department. The bound volumes number nearly 4000, and the pamphlets will add an equal or greater number of titles to this list.

Five quarto volumes, handsomely bound and illustrated, pertaining to the history of Mexico, have been presented by Mr. J. V. Dosal, the Mexican Consul in Baltimore,—a costly, learned, and most acceptable work.

Many important books dealing with economic geology have recently been secured through the generosity of several friends of the university, among them Messrs. William Keyser, Jesse Tyson, and George A. von Lingen. Mr. Keyser has contributed several hundred works on economic geology, many of them from the library of the late Professor Pošepný, of Vienna; Mr. von Lingen has presented the monographs, maps, and charts of the Royal Prussian Survey; and Mr. Tyson a full set of the Annales des Mines, the most important mining journal of France, which began in the last century. Professor Clark has also received several hundred volumes in exchange with geological societies and surveys. Professor Abbe has also made important additions to the great collection on meteorology which bears his name, and which we owe to his generosity. Mrs. Symington has also presented a valuable collection of books from the library of her husband, the late William N. Symington, a well-known mining engineer.

A number of tablets have been placed in the library to commemorate important gifts.

A very valuable collection of Jewish Ceremonial Objects has been presented by Mr. Henry Sonneborn, of Baltimore.
Marburg Collection.

It includes a remarkable modern scroll of the Pentateuch beautifully written, a smaller one of greater age, and a large number of objects that are used in the services of the Hebrews.

**NOTEWORTHY GIFT OF CYPRIOTE GEMS AND INTAGLIOS.**

Mr. Theodore Marburg has given to the university a precious collection of antiquities from the Island of Cyprus. It numbers about ninety pieces and was gathered by Colonel Falkland Warren, a cousin of Mrs. Marburg, who was Government Secretary for Cyprus from 1879 to 1891. In a letter to Mr. Marburg, Mr. Warren says that these antiquities were especially selected during a residence of thirteen years from large assortments brought to him from excavations made on the spot. Some of the relics were bought from peasants who had uncovered them in the cultivation of their fields, and others were taken out of excavations carried on by Colonel Warren for the sole purpose of securing relics.

A catalogue of these rare examples of ancient art, prepared by the collector, was published with many explanatory notes, in the Baltimore Sun of December 19, 1900. The collection has been placed in the hands of the Orientalists connected with the University, and at an early day they will undoubtedly make a report upon it, and a catalogue will be prepared at the time when the gift is arranged for public inspection.

**Publications.**

All the serial publications of the year have been carried forward with their usual regularity. They are as follows:

The American Journal of Mathematics, in its twenty-third volume; the American Journal of Philology, in its twenty-
second; the American Chemical Journal in its twenty-sixth; Studies in Historical and Political Science, of which nineteen series are nearly completed, and several extra volumes have been issued; the Journal of Experimental Medicine, which has entered upon its sixth volume; and Modern Language Notes, of which sixteen volumes are nearly completed. The Contributions to Assyriology, the Memoirs from the Biological Laboratory, and the Journal of Terrestrial Magnetism have also gone forward under the editorial direction of university professors.

MEDICAL SCHOOL.

There is no department of the university which has met with greater success than the Medical School. Two hundred and nine students (all of them college graduates) have been enrolled during the year as candidates for the degree of Doctor of Medicine. An increasing number of physicians come here from every part of the country to follow the shorter courses which are offered in the spring, or to avail themselves of the opportunities afforded by the clinics and laboratories and lectures to become acquainted with the latest aspects of medical science. Special attention is called to the Dean's report, which is given in the appendix.

The Baltimore Association for the Promotion of the University Education of Women has given to the university the sum of eight hundred dollars for a fellowship in the Medical School during the next academic year. The first incumbent, selected by the Medical Faculty and approved by the Trustees, is Miss Florence R. Sabin (M. D., Johns Hopkins, 1900).
The Philippine Commission.

The Philippine Commission for the Study of Tropical Diseases.

Those who have watched the work of the Medical School will remember that a number of generous citizens of Baltimore provided a purse sufficient to send to the Philippines a commission of four medical men, two of them professors in the Johns Hopkins Medical School, two of them students, and an educated layman. Their object was to study tropical diseases. The results of their observations and investigations have been given to the profession from time to time since their return. Within the past year there was an important and gratifying sequence to their studies, which is thus described by my colleague, Professor H. M. Hurd, M. D., Superintendent of the Johns Hopkins Hospital. I ought to add that this letter was written in reply to my enquiries and was not intended for publication, but it is of such general interest that the writer of it has consented to its appearance here.

Baltimore, May 4th, 1901.

In compliance with my promise, I write to say that during the past few weeks we have had a striking illustration of the great value to the whole country of the Medical Commission sent out by the Johns Hopkins Medical School to the Philippine Islands. You may remember that this Commission consisted of Drs. Flexner and Barker and Messrs. Flint and Gay, of the Medical School. During the past year great uneasiness had existed in San Francisco, by reason of the certainty in the minds of medical men that bubonic plague prevailed among the Chinese in Chinatown. Owing to an unfortunate controversy between the Marine Hospital Service, representing the Government, and the local health officials, who were afraid to take efficient repressive measures, for fear that the commercial interests of the city might suffer, no steps were taken to prevent the spread of the disease, and there was every reason to fear that the plague had been introduced into the city, to the great peril of other sections of the country. In January last the condition became so alarming that the Treasury Department appointed Drs. Flexner and Barker, former members of the
Maryland Scholarships.

 Philippine Commission, in connection with Dr. Novy, of the University of Michigan, Commissioners to visit California to ascertain the actual facts and to recommend efficient measures of relief. Upon reaching California they found a state of active antagonism between the State and Federal Governments upon the whole matter. The Governor, in fact, had gone so far as to have certain measures introduced into the Legislature which made it a penal offence to report cases of plague except under conditions which could not well be met by anyone. The Commissioners discovered that a disease resembling plague existed in Chinatown, and during the few weeks of their stay saw patients suffering from the disease, and from autopsies upon those who died and careful cultures from the pathological material thus obtained, demonstrated beyond all doubt that plague existed in San Francisco. After they had demonstrated the existence of plague, they proceeded to formulate certain conclusions, which were extremely judicious, and which commended themselves to all who became familiar with them. With rare tact and good sense they also succeeded in disarming the prejudices of the Governor and bringing about cooperation between the State and Federal authorities. Through their efforts a large public morgue has been established in the city, to which all cases of persons dying from unknown or mysterious diseases are taken. They also arranged for the thorough inspection, examination and isolation of all suspected persons, or persons who had come in contact with plague patients. From the familiarity with the disease which Dr. J. M. Flint, formerly of our Medical School, had acquired in Hong Kong and India, it was recommended that he take charge of the examination and isolation of plague cases. He has already entered upon his duties, and is conducting the work in a most efficient way.

There is a feeling upon the part of everyone that the situation in San Francisco, which threatened to be so serious, has now been fully met by a Commission made competent by experience gained at the Philippine Islands, and that San Francisco has been saved a very great pecuniary loss, and possibly the whole country has been spared an invasion of plague. These facts were brought out quite clearly in Washington this week at a meeting of the Association of American Physicians, where detailed reports were given of the operations of the Plague Commission in San Francisco.

Very truly yours,

HENRY M. HURD.

MARYLAND SCHOLARSHIPS.

In addition to the Hopkins Scholarships annually awarded to meritorious students from Maryland, Virginia, and North
Carolina, the Trustees decided to offer for the coming year twenty scholarships giving free tuition to young men from Maryland. The following announcement was accordingly published and circulated through the State. It is too early to comment upon the results of this offer.

The Johns Hopkins University offers to young men of Maryland needing pecuniary assistance twenty undergraduate scholarships,—in addition to the fifteen Hopkins Scholarships, which will be awarded, as heretofore, to residents of Maryland. The offer is made for the academic year beginning in September, 1901.

These scholarships entitle the holders to free tuition and are tenable for one year. They do not carry exemption from laboratory fees.

The scholarships are for the benefit of all parts of the State, and accordingly not more than half the number will be awarded to residents of the city and county of Baltimore, and not more than one-half to those who are now members of the University. The appointing board will consist of the President of the Board of Trustees, the President of the University, and the Dean of the Collegiate Department. The usual entrance examinations must be passed by the candidates. Applications, accompanied by testimonials, may be sent prior to May 1, 1901, to the President of the University. Appointments will be made as soon as possible thereafter. Correspondence on the subject is invited, and may be addressed to the President of the University.

RELATIONS TO THE SOUTH.

Some misapprehensions having been fostered with respect to the relations of the Johns Hopkins University to the Southern States, it is thought worth while to reproduce the following statements, which formed a part of the article contributed by request of the editors, several months ago, to a weekly journal in New York by our associate, Dr. J. C. Ballagh.

1. More than any other influence the Johns Hopkins University has checked the exodus of youth to foreign universities—a custom dating from colonial times at the South—by offering them not only equal facilities, but a training more American and more suited to our Southern needs. In the
past year 239 out of a total of 465 advanced students have been enrolled from the South. 2. The poor but deserving young men of this region have been aided financially and with honors more largely even than those of other regions. The benefits of 45 scholarships out of a total of 70 are limited to the South, and her sons compete on equal terms for the other twenty-five and for twenty fellowships. Over 260 Southern men have received such or greater honors here. 3. Southern Colleges and schools have been filled with men trained in the best methods of modern research and instruction, who are an inspiration to their students and instrumental in organizing associations for the advancement of the educational and material interests of their respective States. Nearly 200 former students of Johns Hopkins are at present teaching in the South distributed in every state and among more than 65 institutions. Two hundred more are engaged in business or professional work in the South. 4. The development of local industries of the highest importance, such as oyster culture in Maryland and Virginia, has been greatly stimulated. A marine laboratory is maintained for the study of the life of the Chesapeake and of Southern waters. A physical analysis of soils has been of great agricultural value. The geological department has accomplished much for the farmer, promoter, investor and land-owner in determining soil characteristics, water-power facilities, transportation conditions, the location of mineral resources and in publishing and distributing its excellent topographical map and reports for Maryland. 5. The Medical School, aside from the inestimable benefits of its great hospital and trained men and women, has undertaken researches with good results upon the fatal diseases prevalent in this and Southern regions, such as fevers. 6. The first serious attempt, on a large scale, to insure the preservation of the history and literature of the South as written by her own people, has been made through the historical department, which has published more than 20 monographs of original research upon Maryland alone, and 61 upon Southern history, economics, and politics. It has the best collections and library facilities in this field of any American university, and it supplements these by courses of systematic instruction in Southern history and economics. 7. The bonds between Baltimore and the South, weakened by the rise of new commercial towns and ports, have been greatly strengthened through the University's influence; and her twelve periodical publications bear the name of Baltimore and Maryland to the whole civilized and educated world. 8. Important principles of the Johns Hopkins system have been copied in many of the Southern Universities; the requirements for the doctorate, the expansion of advanced or graduate study, the system of advisers which insures a personal direction for the undergraduate, and, finally, a reliance upon the vital and essential—youth, vigor, enthusiasm, reality and the present—rather than upon dim tradition and authority.
Coöperation with the State in the Geological and Other Surveys.

The university has rendered a conspicuous service to the State of Maryland for many years past by its coöperation with the State in the Maryland Geological Survey, the Maryland Weather Service, and more recently, the improvement of highways. Within the past year, two important volumes have been published upon the geology of Maryland. The first is a report on the Eocene prepared by Professor Clark, with the collaboration of a number of well-known experts in other institutions. The second is a report on the descriptive geology of Maryland. It covers Allegany County, and is accompanied by a large folio of maps. This report includes the work of several members of the staff of the Survey, who have also had the coöperation of the several Government Bureaus.

The road work under Dr. Reid has been important. Among other noteworthy improvements it may be stated that the Trustees under the Woolsey bequest to Harford County asked the Highway Division to prepare specifications for the improvements of the roads of that county, and the city of Baltimore has submitted all the materials for the construction of streets to be tested in our laboratory before the contracts were let. The State has asked our aid in testing the cements for use in the new State building at Annapolis, and many county officials call on us for advice and aid in road construction. An instrument for recording the slightest of earthquakes was bought and placed in the laboratory in the course of the last winter, and some very interesting observations have been noted.
Professor Clark has spent a great deal of time in cooperation with the Maryland Commission at the Pan-American exhibit in Buffalo. The display which is there made of the resources of Maryland is most interesting and complete. It has attracted a great deal of praise, not only from the Marylanders who have seen it, but from other intelligent observers. A like service will be rendered by Dr. Clark for the exhibit in Charleston. Further information upon these surveys and upon the weather service is easily accessible to those who are interested in the details.

**Dr. Hollander’s Services in Porto Rico.**

Dr. J. H. Hollander, who was given a leave of absence in order that he might act for the United States Government as a student of the economic conditions of the Island of Porto Rico, was appointed Treasurer a few months after he reached the island, and he has held that important station during the last academic year. His resignation was presented to the government in July, and it is his expectation to return to his work among us at the beginning of the coming session. The report of Governor Allen contains in its appendix the special report of Dr. Hollander, which is thus introduced by Governor Allen:—

Dr. J. H. Hollander, having been appointed Treasurer by the President on April 27, 1900, organized the department on May 2, and has since conducted it with signal ability. He systematized the work by dividing the business among five bureaus: those of (1) accounts, (2) municipal affairs, (3) internal revenue, (4) internal revenue agents, and (5) tax-law revision. In his report, which is found in the Appendix, Chapter III, he gives in detail the duties of these several bureaus and a full statement of their methods and of what they have accomplished. He also gives an interesting history of the revenue system as it existed under the Spanish Government and as it was changed and conducted under the American military author-
The Homewood Estate.

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Ities. The system of taxation as formulated in the revenue law is fully discussed and explained, showing that it avoids the inequalities and injustice of former systems, and requires the property on the Island to support the insular government, and every man to pay taxes according to his ability. Rich and poor are treated with equal fairness and the burdens are distributed according to the strength of the bearer.

It is to me, and doubtless to my colleagues, a source of great satisfaction that one of our number was able to render such important services to the Government, when a new order of things was established in an island that has been for four hundred years under the dominion of Spain. The record of this year, when college men, from seven different institutions, were engaged in the development of new methods of legislation, taxation, education, and other functions of civil government, is a remarkable chapter in the progress of free institutions.

Proposed Change of Site; Offer of the Homewood Estate.

A very important proposition was presented to the Trustees in the middle of the session, and through them to the public. Mr. William Wyman, a well-known and highly respected citizen of Baltimore, proposed to give to the university, as a permanent site, a considerable part—sixty acres and three roods—of the Homewood estate, where he now resides. The offer was made upon certain conditions which seemed very reasonable,—the most important being that an additional endowment of one million dollars should be secured. This generous proposition of Mr. Wyman's was supplemented by the liberal offer of Mr. William Keyser to give one-fifth of the amount named by Mr. Wyman, that is to say, two hundred thousand dollars, or, if the Trustees preferred, to give sixty
acres of land adjacent to that which was offered by Mr. Wyman. The letters of these gentlemen are as follows:

"Baltimore, January 31, 1901.

"To the Trustees of the Johns Hopkins University:

"Gentlemen,—I inherited from my father, the late Samuel Wyman, 60 acres and 3 roods of land, part of the Homewood estate, lying on the west side of Charles street, within two miles of the Washington Monument, in what is now the most desirable and rapidly developing residential portion of the city, a locality seemingly designed by nature for the site of a great institution.

"I desire to present this body of land to the Johns Hopkins University, provided you deem it to its interest to accept the gift, coupled with an agreement that such portion of the land as may be necessary shall eventually be used for the site of the University; that I shall retain the use of my dwelling during my life; and that you will offer to the city 10 acres, more or less, for a public park, in fulfilment of a promise made by me some years ago; and subject to the further condition that the sum of $1,000,000 be given to the University by others, in order that this gift, which is designed by me for the future benefit of the institution, may not at this time be a burden to it.

"I have had the offer put in a legal and binding form, with details more fully expressed, as will appear from the accompanying papers.

"It will give me and my family sincere pleasure if, by complying with the terms therein, you can see your way to accept the land which has been the homestead of my family for over 60 years. It will be a source of pride to me to feel that this property will in the future be occupied by an institution which in the past has shed so much luster upon my native city, and which bids fair to be of such lasting benefit to those who come after us.

"Yours very truly,

"William Wyman."

"Baltimore, February 1, 1901.

"To the Trustees of the Johns Hopkins University:

"Gentlemen,—Having been consulted by Mr. William Wyman in reference to his generous intentions, which have now taken definite form in his letter to you of January 31, I am impressed with the great possibilities his offer presents, not only to the university, but to the city of Baltimore.

"It is difficult to overestimate the advantages already conferred upon this community by the Johns Hopkins University, and it is even more difficult to forecast what it has in store for the future, if at this critical period in its
The Homewood Estate.

history it is generously sustained. The time has unquestionably come when this institution must either move vigorously forward or enter upon a period of decadence, to allow which I cannot but feel will be a reflection upon the intelligence and public spirit of our city.

"Judging from the experience of other places, and looking at our own past history, it requires no prophetic eye to see that in the time to come this magnificent estate, should you see your way to accept it, will become the centre of the intellectual and artistic life of the city, and a constant incentive to the exercise of that liberality which is the distinguishing characteristic of the age.

"Entertaining these views, I esteem it to be both a duty and a privilege to aid in carrying out Mr. Wyman's plans, and hereby agree to give $200,000 of the $1,000,000 which he stipulates shall be raised.

"Or, should the Trustees agree with me that it will be more to the interest of the University to receive an increased amount of land, looking to the institution's future growth, I hereby agree, in lieu of this $200,000, to donate 60 additional acres of the Homewood estate immediately adjoining that which Mr. Wyman proposes to give, and upon which I have, with this object in view, obtained an option at $225,000.

"Should this latter offer be accepted, the University will come into the possession of 120 acres of land, lying in a compact body on the west side of Charles street, singularly well located for its purpose. I submit to you herewith the legal papers embracing the alternate propositions above mentioned.

"Very respectfully yours,

"William Keyser."

These letters were received with great enthusiasm by all friends of the university, at home and at a distance. Mr. Francis M. Jencks at once offered to enlarge the proposed tract by the purchase and presentation of twenty-five adjacent acres; and two gentlemen who requested that their names should not be made public, stated their willingness to buy and give eleven adjacent acres. A fifth lot, likewise adjacent, was also offered to the university by another generous friend, who has lately said that in his view it would be 'a calamity' if the project should fail. These five pieces of land would make a tract of one hundred and seventy-six acres, diversified in surface, partly wooded, partly open, approached by one of the finest
The Homewood Estate.

 avenues of the city (North Charles Street extended),—in all its surroundings a most desirable place as the seat of an institution of learning. Here would be room enough for libraries, museums, cabinets, observatories, halls for recitations and lectures, residences for the President and professors, athletic fields and other accessories. It was not unreasonable to hope that here, as in many other places, buildings would be provided by individual or collective liberality as soon as desirable positions and environment were assured. The recent advances of Washington University in St. Louis were often quoted.

All this was inspiring. The only question was the possibility of securing, as a foundation, the million dollars required by the offer of Mr. Wyman. Measures were at once taken to ascertain whether this sum could be raised in Baltimore by contributions of not less than one hundred thousand dollars each. It was not thought desirable at this time to solicit small gifts by a popular appeal. Some generous responses were promptly received, but not enough to secure the amount desired. A good deal of time was lost by circumstances that need not be recapitulated, and when the summer heat came on, and the summer vacations were at hand, the effort was suspended. I am still hopeful that this most desirable site will be secured. Never again will such an opportunity occur. To the university the success of this plan means a renewal of youth, a fresh departure, a revival of vigor, an increase of usefulness. But the benefits will accrue in many ways to the entire community as well as to the institution in which so much interest has been shown. As a matter of city improvement, or of suburban embellishment, the plan is most commendable. Another park will virtually be added to those for which Baltimore is now famous.
It does not savor too much of self-assurance for the Johns Hopkins to say that it has taken a leading place among the universities of this land, and that in foreign countries its contributions to various branches of science are known and respected. Its financial difficulties are due to the intimate relations which were established by the founder with a single corporation, that became embarrassed and was wholly reorganized. Generous gifts from the citizens of Baltimore and welcome appropriations from the State of Maryland have provided temporary relief. The time has now come to decide whether a work which has accomplished so much for education, science and letters, which has added so much to the reputation of the city, which has brought among us, as permanent and occasional teachers, so many men of the highest rank, and which has afforded to so many youth, especially from Maryland and the Southern States, such admirable preparation for life,—is to be sustained and enlarged, or whether its prestige shall be lost and its usefulness diminished.

It usually takes time to develop the habit of giving to an institution of learning. Harvard, Yale, Princeton, Columbia, all waited for the generous endowments which have come to them in recent years. But surely the citizens of Baltimore, who are very proud of its advantages and renown, will not long delay to provide the means of perpetuating this great school, which increases the attraction of this place of residence and extends its reputation and influence throughout the land.

As the history of five and twenty years comes under review, I hope that a fresh impulse will be given to the original plans and purposes which were of the most liberal character, although they have been of late restricted by the condition of our finances.
May the new administration be encouraged by immediate generosity! Enlarged funds, a new site, appropriate buildings will attract both teachers and pupils, and the university which has done so much in its short life will be more and more a benefit and an ornament to the city where it is placed. It cannot die. It may decay. Upon the citizens of Baltimore its future depends.

**THE JOHNS HOPKINS ALUMNI.**

The increasing interest in the university, shown by those who have here been educated, is one of the most gratifying signs of the times. The general Association of the Alumni, made up chiefly of those who are resident in Baltimore, have presented to the Trustees the sum of one thousand dollars to be applied toward the foundation of a scholarship to be known as the "Alumni Scholarship." Besides this the Trustees have adopted the following resolution:

"Resolved, That the Treasurer be requested to open on his books an Alumni Fund, and to transfer to it the subscriptions which were received a few years ago to the extent of more than eight thousand dollars, contributed in various sums by former students of the University now residing in Baltimore and at a distance."

This action was intended to keep on permanent record the contributions of the alumni, and not in any way to interfere with the disposition of the Fund as already made, or to limit the scope of any future donations that may be received.

Letters, telegrams, and messages were received from the alumni of the University meeting in the places named below:

1. The Northwestern Association of Johns Hopkins Alumni, meeting in Chicago, February 22, Professor Remsen being the guest from the University.
2. The Johns Hopkins University Club of New England, in Boston, February 22, with Professor Griffin as the guest from Baltimore.


4. The Johns Hopkins Club of the Middle West (Missouri and neighboring States west of the Mississippi river), February 22.

5. The Ohio Valley Alumni Association, formed on the 22d of February, 1901.

6. The Johns Hopkins Alumni in the University of Washington, Seattle, February 22.


8. The Johns Hopkins Alumni Association of Central New York, meeting in Schenectady, March 16.


From the Johns Hopkins Club of the Middle West I have received a printed address, beautifully illuminated, expressing their personal regard.

From four of the associations the Trustees received the following letter to which a large number of signatures were affixed:

To the Board of Trustees of the Johns Hopkins University:

Gentlemen,—The undersigned, Alumni of the Johns Hopkins University, are prompted by reason of the public announcement of the intended retirement of the beloved and honored President of the University, Doctor Daniel Coit Gilman, to address to you an expression of some of the feelings and thoughts that, at such a time, arise in the minds of loyal sons of our Alma Mater. We recognize that the change of leadership which seems now, to our great regret, to be rendered inevitable by President Gilman's announced purpose, must prove of critical importance for the future of the institution to whose past management we have owed so much,
and to whose success President Gilman himself has contributed so largely. We know that you are able to take into consideration numerous aspects of the present problem which are of necessity unknown to us. We are well aware, also, that no means will be left neglected which your Board may find helpful in bearing triumphantly your great responsibility as arbiters of the destiny of the Johns Hopkins University. We take the liberty of addressing you merely in the hope that our words may add something to the body of facts that will come under the consideration of the Board at the moment when the decision is to be made concerning the course which the institution is to follow in the future.

We who sign this letter owe no small part of our equipment for the work of life to the time that we spent at your, and our, University, under the care due to the policy which the Board of Trustees and the President of the University initiated, sustained, and applied. At the date when the University began its existence, that policy was a novelty in American academic life. To-day it is a policy that has deeply influenced the ideals of all our most important American universities. We need not attempt to describe or to characterize this policy to the Governing Body, which has aided so largely to make the University a power in the higher life of our whole country. But as men who ourselves work in different communities and under very varied conditions, we are in a position to know by direct experience what the influence of the modern university spirit has come to mean to America. There are few of the recent evidences of progress in our land which have a more purely ideal meaning, or a more widely and deeply practical significance, than the great academic movement of the last quarter of a century possesses. Every enlightened patriot must rejoice when he considers this movement, to recognize how clearly it shows the power of ideals in our national life, and how plainly it also proves that, with us Americans, the loftiest ideals need not remain mere abstractions, but can be embodied in institutions where science and philanthropy work side by side, and where the advancement of learning co-operates with the arts that render wiser and better the life of the masses of mankind.

In this general academic movement of America, the Johns Hopkins University was one of the first institutions to take a leading part. To this day it has remained, despite those material adversities which we so deeply lament, steadily faithful to its original plan. It is our privilege, as the sons of the University, to bear our own testimony to the widespread influence which your policy has exerted in communities far removed from Baltimore.

And as we do this, we especially bear in mind the gratitude which we personally feel, and which, as we also earnestly insist, the whole country owes to Baltimore and to her citizens for their part both in the foundation and in the maintenance of this most beneficent academic ideal. The farsighted benevolence of the founder has been carried into effect through the patient care and the wise discretion of citizens of Baltimore, the
The Alumni.

guards of the University. To our memory, your city will always remain a university city. Those of us who came to it as strangers, have its beauty and the memory of its hospitality inseparably bound up with our highest youthful ideals of learning, of research, and of service. We can wish nothing better for our University than that future generations of scholars shall continue thus to carry to all parts of our land a constantly increasing measure of the spirit wherewith we, in so far as we were able to receive it, were filled during our days of study, of hope, and of ennobling ambitions while we were within your gates. We trust that your city will in this way, from year to year, and from century to century, enlarge the type of influence upon the higher life of our whole country which the first quarter of a century of the Johns Hopkins University has already added to the many sources of power which your community possesses.

And now our special purpose in joining at this time in this hearty expression of gratitude to your Board, to the University, and to Baltimore, for the past, is to give such assurance as we may that the sons of the University are looking with confidence to the Trustees, at the crisis in the affairs of our Alma Mater, to direct the future policy of the institution with the same wisdom with which you have guided the policy of the twenty-five years now closing. We feel that it cannot be indifferent to the Board of Trustees to know that, widely sundered from you and from one another as we are, we still follow, in common and with eagerness, every advance of our University upon the path of higher Academic Ideals, and regret every obstacle which lies in the path of the widening and deepening of the influence of our Alma Mater upon the cause of learning in this country. Your Board, as we are also confident, will fully understand our motives when we express a strong hope that, in choosing the new President, who is to take up the task which our honored and beloved chief now, to our deep regret, lays down, you will be able to find a man as devoted as President Gilman has been to the largest and highest academic ideals,—a man determined to keep the University true to the cause of the advancement of learning, true to the interests of original research, and true to that service of the cause of our whole national education which in the past has been the glory of our University, and an especially honorable addition to the fair fame of Baltimore.

And we venture to indulge the hope, also, that this expression of opinion may make it evident that, in taking the utmost pains to secure the right man to occupy the distinguished position of President of the University, the Board of Trustees will have the most cordial support and will gain additional gratitude from the whole Body of Alumni.

At the risk of seeming a little too personal in this official report, I must convey to all those who have taken part in the alumni meetings my grateful acknowledgments for the
Conclusion.

Kind words that they have expressed for their president, as he retires from office. By the formal papers already mentioned, by oral reports, by letters, and by printed statements I have heard of the consideration which they have shown me, and I am very thankful. There is no satisfaction that can come to me, near the end of a public career, so great as that which I derive from the assurance that those with whom and for whom a life has been spent are my very best friends. I delight to look over the long list of those who have here received a part of their education, and, as I recall their faces, to remember their early struggles, their subsequent achievements, their services, their honors.

CONCLUSION.

In the administration of this university there has always been a division of responsibilities. The business management, including the care of securities, the investments, the construction and repair of buildings, the determination of salaries, and the approval of the budget,—has been in the hands of the Trustees. They have had, since the death of the founder, a most faithful and devoted Treasurer in the person of Mr. Francis White, and he has been aided by a finance committee composed of business men who are well known and respected in the financial circles of Baltimore. Neither the President of the university nor any member of the faculty has had a share in these fundamental proceedings.

On the other hand, the Trustees have left to the faculty, under the guidance of the President, and with the constant co-operation of the Executive Committee, all the work of instruction. It has been the duty of the Faculty to arrange the courses of
Conclusion.

study, to select the minor assistants, to order apparatus, to hold the examinations for admission and graduation, and to select the candidates for academic honors. Of late years they have also nominated to the Trustees suitable candidates for important offices in the teaching staff, as vacancies have occurred. The harmonious operation of all these forces has been absolutely uninterrupted.

I do not know that I can close with more fitting words than those which I uttered at our last commencement.

I congratulate the Johns Hopkins University on the appointment of a President and upon his acceptance of the office. I congratulate the Trustees that they have promoted on the field a teacher who had already won his laurels. I congratulate the Faculty that one of their colleagues becomes the leader. I congratulate the community that a citizen interested in the public welfare is brought to the front. I rejoice that education, science, and letters will be fostered under the guidance of a scholar who is so able, so resolute, so trustworthy, and so honored.

The word with which I close my official relations to this university is gratitude:—gratitude to the Trustees, who called me here and who have upheld from the outset the lofty ideals of a university; to the Faculty, who have made the ideals actual by their talents, their learning, their publications, and their devotion; to the students, who have been loyal and high-minded while here, and have carried our motto to every state in the union and even to distant lands; to the citizens of Baltimore, who have given generously, and who purpose more; to the State of Maryland, for its welcome aid in the last four years. Above all I am grateful to the overruling Providence who has given us all such opportuni-
ties and has spared our lives to behold such results. As His works are studied and His laws interpreted, and as the lessons of human experience are here unfolded by successive generations of teachers and scholars, may freedom, truth, and reverence be our watchwords. Let us never forget the words of the Great Teacher, emblazoned on our shield, *Veritas vos liberabit*.

Respectfully submitted,

Daniel C. Gilman.

September 1, 1901.
REPORTS ON THE INSTRUCTION IN THE
CHIEF BRANCHES OF STUDY.

Prepared by the Principal Instructors in the Several Departments.

Mathematics.

GRADUATE COURSES.

Professor Morley gave the following courses:

1. Advanced Geometry.—In this course the general theory of projective
gometry was developed from the principles of Involution and Apolarity.
The theory of binary forms was developed so far as to include those
memoirs of Hilbert which supplement the work of Sylvester. The theory
of ternary forms was illustrated in detail in the cases of the system of
conics, the cubic, and the quartic. The special quartics discovered respec-
tively by Clebsch and Caporali were discussed.
The relation of Inversive to Projective Geometry, both in the plane and
in space, was considered provisionally. Forms of more than three variables
were illustrated by the quadric, the cubic, and the Hessian of the cubic.

2. Theory of Functions.—This course began with the theory developed in
Klein's 'Icosaeder,' so far as that theory relates to the theory of functions.
Then the Gamma Function was discussed, and Weierstrass's theory of
Elliptic Functions was developed in considerable detail. The course closed
with applications of this theory, of which the class attained a working
knowledge.

Dr. Cohen gave the following courses:

1. Elementary Theory of Functions. Twice weekly, through the year.
This course gave a rather full account of the theory of series, including
Fourier series, the theory of line and surface integrals, the elementary
theory of uniform and of algebraic functions of the complex variable, and
concluded with a short study of singly and doubly periodic functions.

2. Lie's Theory of Transformation Groups. Twice weekly, first half-year.
This course was based on Lie's Vorlesungen über Continuierliche Gruppen
and Lie's Theorie der Transformationsgruppen, and included a fairly extended
study of the general theory for invariables.
Courses of Instruction, 1900-1901.

3. Lie's Theory of Contact transformations. Twice weekly, second half-year. This course was based on Lie's *Geometrie der Berührungstransformationen*.

4. Theory of Numbers. Three times weekly, first half-year. This course included a full account of the elementary theory. It was based on Dirichlet's *Zahlentheorie*, with frequent references to Mathews and Bachmann.

5. Theory of Differential Equations. Twice weekly, second half-year. This course began with several of the classic proofs of the existence theorem in the case of systems of ordinary and of partial differential equations. The study of the integrals of ordinary differential equations of the first order in the neighborhood of their critical points was then taken up. This was followed by a study of the general theory of ordinary linear differential equations, concluding with the differential equation of the hypergeometric series, and a study of the hypergeometric functions.

**Undergraduate Courses.**

The undergraduate courses are practically the same from year to year. During the past year they were given as follows:

**Major Course.**

Determinants. Four hours weekly, until October 19. Professor Hulburt.

Differential and Integral Calculus (special topics). Four hours weekly, October 23 to December 21. Professor Hulburt.

Elementary Theory of Equations. Four hours weekly, January 2 to February 1. Professor Hulburt.

Elements of Projective Geometry. Four hours weekly, February 5 to March 29. Professor Hulburt.

Analytic Geometry of Three Dimensions. Four hours weekly, April 11 to the end of the year. Professor Hulburt.

**Minor Course.**

Analytic Geometry. Four hours weekly, until December 21. Professor Hulburt.

Differential and Integral Calculus. Four hours weekly, January 2 to the end of the year. Professor Hulburt.

**For Candidates for Matriculation.**

Algebra (special topics); Solid Geometry; Plane Trigonometry; Analytic Geometry (straight line and loci). Four hours weekly, through the year. Mr. Coble.

In the Seminary, which met weekly, papers were read by Dr. Franklin, Mrs. Franklin, Professor Maltbie, Dr. Fields, as well as by the instructors and students in the department.

Dr. Fields (Fellow in 1885) gave a course of four lectures, during May, on the theory of Algebraic Functions, embodying results of recent investigations of his own.
Physics.

The American Journal of Mathematics is in its twenty-third volume. With this volume is presented a portrait of George Salmon.

FRANK MORLEY,
Professor of Mathematics.

Physics.

Before making any formal statement of the work done in the Physical Laboratory during the year 1900–1901, there must first be noted the great loss experienced both by the laboratory and the university in the sudden and unexpected death of Professor Rowland. He had directed his classes and the laboratory work of a few of his students from the first of October until January, when an attack of illness confined him to his house for many weeks. During this confinement, however, he was able to direct that portion of the work of the laboratory in which he was personally most interested. He returned to his accustomed duties the first of March and was able to criticize and help the work of all those students who were coming up for their Doctor’s degrees in June. He was again taken ill, however, and died April 16, 1901. Professor Rowland’s death was a personal loss to all the students and associates, but to none more so than to those with whom he was connected within the last few weeks of his life.

The Physical Laboratory has been open daily during the year for the work of advanced and undergraduate students. Regular course of lectures have been given and meetings have been held weekly for the reading of the current journals. The Physical Seminary has met once a week under the direction of Professor Ames. The main study for the year was a series of reports on the present basis of Experimental Physics. A series of brief biographies of physicists not now living was also prepared by the graduate students and read at these meetings.

The regular courses of instruction were as follows:

By Professor Rowland and Professor Ames:
- Electricity and Magnetism. Four times weekly, through the year.

By Professor Ames:
- The Physical Seminary. Two hours weekly, through the year.
- Thermodynamics. Twice weekly, first half-year.
- Physical Optics. Twice weekly, second half-year.
- Advanced General Physics (with the assistance of Dr. Bliss and Mr. Whitehead). Four times weekly, through the year.
- General Physics (Minor Course). Four times weekly, through the year.

By Dr. N. E. Dorsey:
- Conferences on Professor Rowland’s Lectures. One hour weekly, first half-year.
- Discharge of Electricity through Gases. Twice weekly, second half-year.
Courses of Instruction, 1900–1901.

By Mr. J. B. Whitehead:
Applied Electricity. Twice weekly, through the year.

By Dr. W. J. A. Bliss and Dr. W. B. Huff:
Laboratory Instruction for Undergraduate Students. Daily, through the year.

In the Physical Seminary papers on the following subjects were read by the advanced students and members of the Seminary:

Professor Ames—Mechanical Equivalent of Heat.
L. A. Parsons—Liquefaction of Gases.
N. A. Kent—Expansion due to heat of solids, liquids, gases.
H. Pender—Measurements of K and $\mu$.
Dr. N. E. Dorsey—Electric Units. Absolute Measurements.
Dr. W. B. Huff—Radiation of a Black Body.
J. E. Routh—Velocity of Sound.
E. P. Hyde—"g". Methods. Objects. Results.
C. C. Schenck—Fresnel's Formulae for Reflection.
J. Barnes—Velocity of Light.
L. J. Briggs—Diffusion of solids, liquids, gases.
R. E. Loving—Frequency of Tuning Forks.
Dr. W. J. A. Bliss—Laws of Electricity.
N. A. Kent—Specific heats of solids, liquids, gases.
Dr. W. B. Huff—Latent Heat; heat of combination.
Dr. N. E. Dorsey—Contact Electricity. Heat of Ionization.
H. D. Hill—Thermoelectricity.
G. W. Middlekauff—Colour Sensation.
H. Pender—Plane of Polarization; direction of vibration.
C. C. Schenck—Verification of Wave-surfaces in Crystals.
J. E. Routh—Solar Constant.
L. J. Briggs—Values of "v", ratio of units.
Dr. W. J. A. Bliss—Dispersion Curves.
J. Barnes—Capillary Phenomena. Measurement of T.
R. E. Loving—Elastic Constants of solids, liquids, gases.

In the laboratory the following work has been done:

The investigation of the Zeeman Effect has been continued by Mr. N. A. Kent, and many new and important conclusions have been reached. This work has been offered by Mr. Kent as his dissertation for the degree of Doctor of Philosophy.
Mr. C. C. Schenck has continued his investigation of the spark spectra of various metals, and in particular has analyzed the sparks in many cases by means of prisms and revolving mirrors. Mr. Schenck has offered this work as his dissertation for the degree of Doctor of Philosophy.

Mr. H. Pender has been studying under Professor Rowland's personal direction the magnetic effect of electrical convection, using a method devised by M. Cremieux, and has shown in his experiments that the latter's conclusions were erroneous, thus confirming the results of Professor Rowland's Berlin experiment. This work of Mr. Pender's has been accepted as his dissertation for the degree of Doctor of Philosophy.

Mr. N. E. Gilbert has continued and completed his investigation of a possible connection between magnetism and the motion of matter, which was begun in the hope of finding an explanation for the magnetism of the earth. This work of Mr. Gilbert's gave purely negative results, but it is of great interest. It was accepted as his dissertation for the degree of Doctor of Philosophy.

Mr. L. J. Briggs has performed under the advice of the Directors of the laboratory some interesting experiments on the adsorption of gases and dissolved substances by finely divided particles of quartz. This work of Mr. Briggs's resulted in some interesting conclusions, and was offered by him as his dissertation for the degree of Doctor of Philosophy.

Dr. W. B. Huff has continued the work begun some years ago in the laboratory, on the effect of pressure on the radiation of light from the electric arc. Dr. Huff's work marks a step in advance in our understanding of this most important phenomenon.

Mr. James Barnes made a short but interesting study of the absorption of light by finely divided particles held in suspension in water, and Mr. J. T. Barrett has made a series of interesting observations on the nature of Nobili's rings.

Abstracts of the above researches appeared in the Johns Hopkins Circulars for June, 1901.

It may be of interest to note that, in the eclipse expedition sent by the U. S. Naval Observatory to Sumatra to observe the eclipse of May 17, there were many of the former students of the laboratory, Mr. L. E. Jewell taking charge of the spectroscopic work, assisted by Drs. Gilbert, Humphreys, and Mitchell.

During the year there have been enrolled 17 graduate students following Physics as their principal subject, five of whom received the degree of Doctor of Philosophy, one in February and four in June.

J. S. Ames,
Professor of Physics.
Chemistry.

After the fire of last year, the Chemical Laboratory was remodelled to some extent and put in thorough order, so that at the beginning of this year everything was in excellent condition. The new arrangements have proved to be satisfactory in every respect. In addition to the restoration of the third story, new floors were laid throughout the building, and a new system of plumbing was introduced, which was much needed. This has saved us a great deal of trouble and delay in our work.

During this year the laboratory for quantitative analysis, on the third story, has been equipped with electrical apparatus for various purposes, but more especially for electrolytic analysis. The facilities for this work are now all that could be desired. The introduction of this system is due to Professor Morse, who takes a lively interest in everything pertaining to this branch of the work in Chemistry.

The arrangements for Physical Chemistry, referred to in the last report, have proved satisfactory to all concerned. Rooms well adapted to the work are now in the adjoining building (Biological Laboratory), and everything necessary is there supplied.

The most serious result of the fire felt at the present time is the loss of the museum. We have, however, succeeded in getting together a fair collection, and this is growing in consequence of gifts from various sources. Efforts are being made to build up as good a museum as possible within the near future.

During the year, lectures and class-room instruction have been given as indicated below:

By Professor Remsen:

Chemistry of the Compounds of Carbon.  Four times weekly, through the year.
Meetings for Reports on the Current Journals of Chemistry.  Weekly, through the year.

By Professor Morse:

General Inorganic Chemistry (Major Course).  Four times weekly, until Christmas.
Compounds of Carbon (Major Course).  Four times weekly, from Christmas until the end of the year.

By Professor Renouf:

General Chemistry (Minor Course).  Four times weekly, through the year.

By Professor Jones:

Physical Chemistry (Advanced Course).  Three times weekly, through the year.
Physical Chemistry (Elementary Course).  Twice weekly, until February.
By Dr. Gilpin:

Reviews in General Chemistry (Minor Course). Weekly, through the year.

A course of historical lectures has been given by graduate students. The names of the lecturers and their subjects are given in the following table:

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. C. W. Frazer</td>
<td>Camphor.</td>
</tr>
<tr>
<td>V. J. Chambers</td>
<td>Indigo.</td>
</tr>
<tr>
<td>B. P. Caldwell</td>
<td>Diazo Compounds.</td>
</tr>
<tr>
<td>D. W. Horn</td>
<td>Improvements in the Methods of Estimating Sulphuric Acid.</td>
</tr>
<tr>
<td>W. W. Simmons</td>
<td>Uric Acid.</td>
</tr>
<tr>
<td>R. M. Bird</td>
<td>Causes of the Luminosity of Flames.</td>
</tr>
<tr>
<td>W. A. Case</td>
<td>Hydrocyanic Acid.</td>
</tr>
<tr>
<td>W. S. Weedon</td>
<td>Acetoacetic Ether.</td>
</tr>
<tr>
<td>F. E. Clark</td>
<td>Molecular Weight of the Compounds of Aluminium.</td>
</tr>
<tr>
<td>F. L. Parker</td>
<td>Quinones.</td>
</tr>
</tbody>
</table>

Seven candidates presented themselves for the degree of Doctor of Philosophy. Their names, with the titles of their dissertations, are given below:

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>Dissertation Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. M. Bird</td>
<td>The Action of Ammonia and of Alcohols on the Two Chlorides of Orthosulphobenzoic Acid.</td>
</tr>
<tr>
<td>B. P. Caldwell</td>
<td>A Contribution to the Study of Aqueous Solutions of Double Salts.</td>
</tr>
<tr>
<td>V. J. Chambers</td>
<td>The Action of Phenols on the Chlorides of Paranitro-orthosulphobenzoic Acid.</td>
</tr>
<tr>
<td>J. C. W. Frazer</td>
<td>Relation between the Color and Composition of the Alkali Salts of Nitrophenols.</td>
</tr>
<tr>
<td>F. L. Parker</td>
<td>Electrolytic Preparation of Permanganic Acid.</td>
</tr>
<tr>
<td>W. W. Simmons</td>
<td>The Constitution of the so-called Infusible Diamide of Parasulphobenzoic Acid.</td>
</tr>
</tbody>
</table>

These will be published in separate form as dissertations, and the more important parts will be published in the American Chemical Journal.

Twenty-four graduate students have been enrolled who have followed Chemistry as their principal subject.

Volumes XXIV and XXV of the American Chemical Journal have been issued.

Ira Remsen,
Professor of Chemistry.
Courses of Instruction, 1900–1901.

Geology.

The Geological Laboratory was open daily, throughout the year, to graduate and undergraduate students. The library facilities have been largely increased by the gifts of books and maps secured through the generosity of Messrs. William Keyser, G. A. von Lingen, and Jesse Tyson. These additions have materially strengthened the work on the side of economic geology.

During the year the following courses of instruction were given:

(a) General Geology, by Professor Clark and Dr. Shattuck. *Four lectures and one afternoon in practical work each week, throughout the year.*

(b) Paleontology, by Professor Clark. *One lecture each week, throughout the year.*

(c) Geological Surveying, by Professor Reid. *Two lectures each week, first half-year.*

(d) Exploratory Surveying, by Professor Reid. *Two lectures each week, second half-year.*

(e) Mineralogy, by Associate Professor Mathews. *Four lectures and two laboratory exercises each week, throughout the year.*

(f) Petrography, by Associate Professor Mathews. *Three lectures each week, throughout the year.*

(g) Physiographic Geology, by Dr. Shattuck. *One lecture each week, one half-year.*

(h) Stratigraphic and Structural Geology, by Mr. Willis. *Two lectures each week, last third-year.*

(i) Geological Conferences. *Weekly, throughout the year.*

**Original Work and Publications.** Geological work was continued by Professor Clark, both as Geologist of the U. S. Geological Survey and Chief of the Maryland Geological Survey, on the Coastal Plain deposits of the Middle Atlantic States, a monograph being published with the aid of Mr. G. C. Martin, on the Eocene deposits of Maryland. He was also actively employed in the management of the State Geological Survey and State Weather Service and in the supervision of the publications of those bureaus. He had been appointed during the previous year, by Governor Smith, Commissioner on behalf of the State of Maryland to re-survey the Mason and Dixon line, and has been associated in this work during the past year with the Superintendent of the U. S. Coast and Geodetic Survey and the Commissioner of Pennsylvania, the survey being now well advanced. Professor Clark also prepared, as the representative of the State Commission of the Pan-American Exposition, a large exhibit of the mineral resources of the State which is now installed in the Mines Building at Buffalo.

Professor Reid devoted his attention to the study of various problems connected with ice movement, and during the summer of 1901 visited
the Cascade Mountains of Oregon, making ascents of Mt. Adams and Mt. Hood and carefully studying their glaciers. As Chief of the Division of Highways of the Maryland Geological Survey, Dr. Reid has been employed in a study of the various physical problems connected with road-metals and in directing the work of the Highway Division.

Associate Professor Mathews has continued his work in the Piedmont belt of Maryland, devoting himself to a study of the crystalline area of Harford County. Dr. Mathews was actively engaged throughout most of the year as Assistant State Geologist and in editing the publications of the State Geological Survey.

Dr. Shattuck has been engaged the past year in a study of the Neocene and Pleistocene deposits of the southern counties of the State. He has reached the solution, with the aid of his associates, of many of the difficult problems connected with these formations and has published a valuable contribution to Pleistocene stratigraphy.

Dr. Fassig has been engaged in a study of special problems in connection with his work in meteorology, and has already made much progress in a critical study of the climate of Baltimore.

Three candidates presented themselves in June for the degree of Doctor of Philosophy, Mr. G. C. Martin who presented a dissertation on the Miocene Pelecypoda of Maryland, Mr. G. B. Richardson who presented a dissertation on the Red Beds of the Black Hills, and Mr. J. A. Bonsteel who presented a dissertation on the Soils of St. Mary's County, Maryland, in relation to the geology.

Several other investigations were started by other members of the department and will result in later contributions.

Excursions. Numerous short excursions were made during the autumn months into the region immediately adjacent to Baltimore, both in the Coastal Plain and the Piedmont Plateau. A more extended expedition was made in the spring into the valley of Virginia, the Luray Caverns and the Natural Bridge being visited.

Scientific Societies. The fortnightly meetings of the Geological Society of Washington were attended from time to time during the winter by the instructors and students of the department, all of whom were elected non-resident members of that organization. Several members of the department also became members of the National Geographic Society and availed themselves of its privileges. The results of many of the most noteworthy investigations of the year are presented to these societies, and attendance at the meetings is considered an important part of the students' work.

Coöperation. Much important coöperation has been secured for the department during the past year through the courtesy of the chiefs of several of the Government Bureaus. The close affiliation also existing between several of the State Bureaus and the geological department has
been of much material advantage in the conduct of the various investigations which have been under way.

The cooperation rendered by the U. S. Geological Survey, through its chief, Hon. Charles D. Walcott, and by the U. S. Weather Bureau, through its chief, Professor Willis L. Moore, has been of very material advantage to the students in geology in various ways. Professor Clark has been for several years in charge of a division of Coastal Plain work as a geologist of the U. S. Geological Survey. Mr. Bailey Willis, of the U. S. Geological Survey, is granted leave of absence yearly to give a course of lectures upon stratigraphic and structural geology. Dr. Fassig has also been designated by Professor Moore as an instructor in meteorology upon the staff of the geological department, and Professor Cleveland Abbe is granted the privilege of giving special lectures upon the principles of meteorology from time to time. Professor Moore has further appointed two of the students of the geological department as assistants in the Weather Bureau office at the University, where they have an opportunity not only of learning the methods of Weather Bureau work, but also of securing important financial aid. Dr. L. A. Bauer is also granted permission by the Superintendent of the U. S. Coast and Geodetic Survey to give a few lectures from time to time on the subject of terrestrial magnetism.

**Apparatus and Collections.** Several important additions were made to the apparatus and collections during the year. The library was considerably enlarged by the gifts of books and maps previously mentioned.

WM. BULLOCK CLARK,
Professor of Geology.

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**The Biological Sciences.**

During the past academic year the biological laboratory has been open for advanced and collegiate students, and certain courses have been attended by students in the medical school. Lectures and class-room instruction have been given as follows:

**By Professor Brooks:**
- Advanced Zoology. For graduate students. *Weekly, through the year.*
- Meetings of graduate students for reports on the current literature of Zoology and Botany. (With Dr. Andrews and Dr. Johnson.) *Weekly.*
- Elementary Zoology. *Twice a week, October 2 to Easter vacation.*

**By Dr. Andrews:**
- General Biology. *Daily, to April 1.*
- Elements of Embryology. *Three times a week, from April 1 to end of session.*
- Comparative Embryology. *Daily, April 1 to end of session.*
- The Structure of Protoplasm. Ten lectures for graduate students.
The Biological Sciences.

By Dr. Barton:
Analysis of Plants. *Twice weekly, from April 1 to end of session.*

By Dr. D. S. Johnson:
Morphology of Plants. For graduate students. *Two exercises a week, through the year.*

Elective Course in Botany. For undergraduates. *Two exercises a week, from October 1 to Easter.*

**Advanced Work in Zoology.**

The following researches have been carried on in the laboratory during the year: The Normal Amputation and Regeneration of Planarians; The Embryology of the Unionidae; The Life History of the Olindiadæ; The Anatomy and Histology of the brain of the Shark; The Embryology of the Alligator; The Development of Holothurians; The Structure and Development of the Echini; The Origin and Growth of Oyster Reefs; The Artificial Propagation of marine animals; On Peripatus; The Structure and Development of Coral-polyps.

A fellowship was awarded to W. C. Curtis, who has continued through the year his researches in the laboratory, on the regeneration of Planarians, and on the development of Lamellibranchs. The Adam T. Bruce Fellowship was awarded a second time to Dr. Caswell Grave, who has continued his economic and biological studies of the Oyster Beds of North Carolina, with the cooperation of the U. S. Fish Commission. The results which Dr. Grave has obtained are notable contributions to economic marine biology. He has also continued through the year his studies in the morphology and embryology of Echinoderms.

Dr. A. M. Reese has been appointed Professor of Biology in Allegheny College. Dr. W. C. Curtis has been appointed Assistant in Biology, University of Missouri.

The Cell, by Wilson, Brooks' Foundation of Zoology, and the Embryology of Korschelt and Heider were read in course in the Zoological Seminary, which met weekly, throughout the year.

The degree of Doctor of Philosophy was bestowed upon W. C. Curtis, whose dissertation is upon "Planaric maculation"; upon W. C. Coker, whose dissertation is upon "The Embryology of Taxodium"; and upon G. W. Houser, whose dissertation is upon "The brain of Mustellus canis."

Printed copies of the dissertation of L. E. Griffin have been presented to our library, in accordance with our rules. The dissertations of Reese, Duerden, Coker, Curtis and Houser are in press, but not yet published.

Leave of absence during the month of January, 1891, was granted to me for the delivery in Boston of a course of nine Lowell Lectures on "Natural History and Natural Knowledge."
Courses of Instruction, 1900–1901.

Marine Zoology.

The researches in marine biology which have been carried on in past years at Beaufort, North Carolina, by parties of investigators from this University, have led the United States Fish Commission to establish, at Beaufort, a permanent laboratory for researches tributary to the economic work of the Commission. The resources of the Government have given to the new laboratory apparatus and equipments which are much more abundant and effective than those we had been able to command, and the laboratory, which has been developed in direct continuity with our beginnings, will put the rich natural advantages of Beaufort at the command of all future investigators.

The laboratory was open from June 1 to September 20; and the following students and instructors from our own laboratory spent most of this time at Beaufort, carrying on researches, most of which will soon be ready for publication, upon the following subjects: Dr. Caswell Grave, Assistant in Zoology: The conditions which affect natural and artificial oyster beds; Improved method of rearing marine larvae; The development of Echinoderms. Dr. W. C. Curtis, Fellow in the University: The surface fauna of Beaufort. R. P. Cowles, Fellow in the University: The embryology of Phoronis and Rennla. D. H. Tennent, Graduate Student: The Annelide of Beaufort; The development of Annelida. O. C. Glaser, Graduate Student: The food of oysters on artificial beds; The embryology of Gasteropods. J. A. E. Eyster, Graduate Student: The development of Arenicola. My own work at Beaufort was the revision of my work in 1893–95 on the embryology of the oyster. The improvement in methods which has taken place in the last twenty years, enabled me to add so much to the results of my earlier work, that my new studies, in which I was assisted by Mr. Tennent, will be made the subject of a new memoir on the life-history of the oyster. Of the nineteen investigators who made use of the new laboratory this summer, more than half have at some time been among our students.

Among them, in addition to those I have named, were E. B. Wilson, now Professor in Columbia University; T. H. Morgan, now Professor in Bryn Mawr College; H. V. Wilson, now Professor in the University of North Carolina and Director of the Beaufort Laboratory; and George Lefèvre, now Professor in the University of Missouri.

Advanced Work in Botany.

Researches have been carried on in the laboratory, under the immediate supervision of Dr. D. S. Johnson, upon the subjects named in the report for last year. Papers upon The Development of Peperomia, The Development of Saurus, and The Embryology of Taxodium are now in press.

The Saturday course in Botany has been conducted by Dr. Johnson as in past years.
The Biological Sciences.

Physiology.

The courses in Animal Physiology during the year were conducted by Professor W. H. Howell, with the assistance of Dr. P. M. Dawson, Instructor in Physiology, Dr. Joseph Erlanger and Mr. P. G. Stiles, Assistants in Physiology. A systematic course of lectures and demonstrations was given to the Medical Class. This course continued throughout the year, and was accompanied by laboratory exercises held during the forenoons of October, November, and December. The supervision of the laboratory exercises was shared by all of the instructors, as this work constitutes both the most laborious and the most profitable part of the course. A second course of lectures, demonstrations, and laboratory exercises was given during three afternoons of the week from January to June to a class of graduate students in the philosophical department. This course was conducted by Professor Howell, assisted in the laboratory exercises by Mr. Stiles, and was offered as fulfilling the requirements of a first subordinate subject for the degree of Ph. D. A Journal Club, composed of the instructors and advanced students, met weekly to present and discuss current physiological literature. A similar weekly meeting was held in the evenings to read and discuss certain topics in General Physiology. The readings followed in general the plan of Verworn's "Allgemeine Physiologie" and were attended by a number of graduate students in the biological Courses. A number of researches have been in progress during the year and the following have been completed and prepared for publication: Observations on the changes in blood-pressure during normal sleep, by C. E. Brush, Jr. and R. Fayerweather (American Journal of Physiology, Vol. V, 1901); Rhythmical Contractions of Oesophageal Muscle in various Media, by P. G. Stiles, to appear in the current volume of the American Journal of Physiology; Observations on the Nutrition of Dogs with shortened small intestine, by Joseph Erlanger and A. W. Hewlett, to appear in the current volume of the American Journal of Physiology; A critical note on clinical methods of determining blood-pressure, by C. E. Brush, Jr. (Transactions of the Massachusetts Medical Society); Normal Menstruation and some of the factors modifying it, by C. D. Mosher (Bulletin of the Johns Hopkins Hospital, Vol. XII). The fellow in Physiology, Mr. P. G. Stiles, resigned during the year to accept the position of Assistant in Physiology, his work being confined mainly to the class made up of graduate students from the philosophical department.

William K. Brooks,
Professor of Zoology.
Greek.

Under the direction of Professor Gildersleeve the advanced students of Greek have been organized into a Greek Seminary. According to the plan of the Seminary, the work of each year is concentrated on some leading author or some special department of literature. During the past year the work has been in the Attic Orators.

In the Seminary proper, which met twice a week during the academic year, the orators chiefly studied were Antiphon, Lysias, Isocrates, Isaeus, Hyperides, and Demosthenes. Especial attention was paid to the development of language and style, and to the antique canons of aesthetic criticism. The members were required to present in turn exegetical and critical commentaries on select portions of the orators, to make analyses of speeches, and to prepare introductory lectures and papers on special points.

The work of the Seminary was supplemented by the study, under the professor's guidance, of the rhetorical writings of Dionysius of Halicarnassus, and by courses of lectures on Greek Rhetoric and on the History of Attic Oratory.

Besides the Seminary course proper, Professor Gildersleeve conducted a series of twenty exercises in extemporaneous translation from Greek into English and English into Greek, and lectured once a week during the session on the Syntax of the Hypotactic Sentence, and once a week after the first of January on Greek Elegiac and Iambic Poetry.

Dr. C. W. E. Miller conducted auxiliary courses in Demosthenes and Aristotle's Rhetoric, and a class in Prose Composition. Weekly, during the second half-year.

Undergraduate courses were conducted as follows:

Associate Professor Spieker:

Justin Martyr. Twice weekly, first half-year.
Demosthenes, Oratio in Leptinem. Three times weekly, first half-year.
Sophocles, Oedipus Tyrannus; Elegiac, Melic, and Iambic Poets. Three times weekly, second half-year.
Lysias, vii, xii. Three times weekly, first half-year.
Plato, Apology; Euripides, Iphigénie in Tauris. Three times weekly, second half-year.
Prose Composition (two classes). Weekly, through the year.

Undergraduates read privately for examination the following books:

Aeschylus, Prometheus Vinctus. (3).
Aristophanes, Clouds. (2).
Xenophon, Hellenica, book i. (4).
Homer, Odyssey, bks. i, ix, x. (4).
Homer, Odyssey, books v, vi, vii. (1).

B. L. Gildersleeve,
Professor of Greek.
The organization and plan of the Latin Seminary are similar to those adopted in the department of Greek. Under the direction of Associate Professor Smith it met twice a week throughout the year, the centre of work being the Roman historians,—more especially Livy and Tacitus. After the Director had given a number of lectures on these authors, the members of the Seminary presented in turn commentaries on selected portions of Livy, Tacitus, Sallust and Suetonius. Papers were also read by them containing the results of various investigations suggested by the taste and proficiency of each.

Besides the Seminary course and the auxiliary work, Associate Professor Smith gave a course of twenty lectures on Roman Historiography, with especial reference to the sources of early Roman history and the methods and ideals of the Roman historians. He also lectured once a week throughout the year on the Roman Elegiac Poets, and conducted a Journal Club, which met fortnightly to report and discuss recent work of interest in the field of Greek and Latin Philology.

Dr. H. L. Wilson lectured once a week during the first half-year on Latin Epigraphy, and for the remainder of the year conducted a course in the interpretation of Latin Inscriptions.

Dr. M. C. Sutphen lectured once a week during the second half-year on Latin Syntax, with especial reference to the Sermo Cotidianus, and throughout the year conducted a class for advanced students, in the rapid reading of the Roman Historians.

Undergraduate courses were given as follows:

By Associate Professor Smith:
- History of Roman Literature. Weekly, through the year.

By Dr. Wilson:
- Tacitus. Two hours weekly, second half-year.
- Juvenal; Martial. Three hours weekly, first half-year.
- Terence; Plautus. Three hours weekly, second half-year.
- Prose Composition. Weekly, through the year.

By Dr. Sutphen:
- Livy, books xxi and xxii. Three hours weekly, first half-year.
- Horace, selections. Three hours weekly, second half-year.
- Cicero, Cato Major; Sallust, Catiline. Two hours weekly, first half-year.
- Ovid, Metamorphoses; Vergil, Eclogues (selections). Two hours weekly, second half-year.
- Prose Composition (two classes). Weekly, through the year.

Undergraduates read privately for examination the following books:
- Caesar, Bellum Civile, book i.
- Cicero, De Amicitia.
Courses of Instruction, 1900-1901.

Ovid, Fasti (selections).
Vergil, Aeneid, books ix and xii.
Pliny, Epistles.
Plautus, Miles Gloriosus.

Kirby Flower Smith,
Associate Professor of Latin.

Sanskrit and Comparative Philology.

During the session of 1900-01, the Vedic Seminary, under the direction of Professor Bloomfield, was engaged in the study of the Rig-Veda, the most important document of Hindu antiquity. The course began with some introductory lectures, outlining the methods of Vedic study and describing the apparatus available for the same. Under the methods of Vedic study pursued in this Seminary absolute restriction to any single document is precluded. Vedic antiquity is regarded as a single larger chronological period, the Vedas are studied as a unit; therefore, every Rig-Veda hymn, as far as possible, is interpreted in the light of the related conceptions of the remaining Vedic texts. In this way were read a considerable number of hymns representing the leading themes of the Rig-Veda: prayers to numerous members of the Vedic pantheon, philosophical hymns, and hymns that illustrate the main features of ancient Hindu life.

Mr. Arthur Henry Ewing, formerly of Ludhiana, and now of Allahabad, in India, was admitted to the degree of Doctor of Philosophy on Commemoration Day, February 22, 1901. In addition to Sanskrit, his main subject, Mr. Ewing carried on studies in Philosophy and Arabic. The title of his dissertation, now in press, is: The Hindu Conception of the Functions of Breath. Mr. Jens Anderson Ness, of Minnesota, was admitted to the same degree at the final exercises, June 11, 1901. In addition to Sanskrit, his main subject, and Greek and Latin, his subordinate subjects, Mr. Ness carried on extensive studies in Avestan, Lithuanian, the Germanic languages, and Comparative Philology. His dissertation is on Concatenation in the Rig-Veda.

A second, more elementary, course of Vedic study was carried on during the second half of the session. Its object was to introduce into the language and literature of the Vedas, and to correlate the Vedic language with the dialect of the Classical Sanskrit. A preliminary discussion of Vedic grammar was followed by reading selected specimens of the Rig-Veda. The metres, the accent, the special phonetic, morphological, and lexical peculiarities of the Vedic language claimed the chief attention.

To the study of Classical Sanskrit were devoted four hours a week during the first semester and two during the second. The subjects were readings
from the Nala and the Hitopadeśa, including the regular beginner's course of two hours weekly during the session; the latter is the formal introduction to the study of Indian philology, as well as of the Comparative Grammar of the Indo-European languages. Mr. Ewing, the Fellow in Sanskrit, took part in these instructions.

The work in Comparative Philology was two-fold. First, a course of lectures on General Comparative Philology. This began with a sketch of the linguistic ethnology of the Indo-European peoples, dealing with their ethnical interrelations, their early geography (the so-called Aryan question), and their common characteristics. Then came in brief survey sketches of India, the Vedas, Brahmanism, Buddhism; Iran, the Achemeni-dan inscriptions, the Zoroastrian (Avestan) religion; the Indo-European peoples on the boundary line between Asia and Europe; the European peoples. This was followed by lectures and readings on the history and principles of Linguistic Science.

A course in Comparative Grammar of the Indo-European languages dealt with the history of Indo-European noun-suffixes with more particular reference to Greek, Latin, German and Sanskrit.

MAURICE BLOOMFIELD,
Professor of Sanskrit and Comparative Philology.

Oriental Seminary.

In the Oriental Seminary, under the direction of Professor Haupt, twenty-four courses were given during the past year, special attention being paid to the Old Testament, the Cuneiform Inscriptions, and Prose Composition in Hebrew, Arabic, Assyrian, Syrian, and Ethiopic.

Seven hours weekly throughout the year were devoted to the study of the Old Testament. In the Old Testament Seminary Professor Haupt gave a Critical Interpretation of the Book of Proverbs, two hours weekly through the year. He also conducted a series of weekly exercises in Hebrew Prose Composition, the students translating idiomatic English sentences into Hebrew. Professor Johnston met a class, one hour weekly through the year, for Reading at Sight selected portions of the Historical Books, and the Rayner Fellow in Semitic, Dr. Grimm, interpreted the Book of Judges, two hours weekly through the year, special attention being paid to a minute grammatical analysis. The instruction in Elementary Hebrew was given by Professor Haupt during the first half-year; in the second half-year it was continued by the Fellow in Semitic, Mr. Blake.

The courses in post-Biblical Hebrew were conducted by Dr. Rosenau, a class meeting two hours weekly through the year for the study of the
Mishnah and Talmud. A series of Lectures on the Talmud was given by Dr. Rosenau during the first half-year.

In the course devoted to Comparative Semitic Grammar Professor Haupt gave, during the first half-year, an encyclopedic survey of the domain of Semitic philology; while during the second half-year he discussed some selected problems in Comparative Semitic Grammar.

Four hours weekly were devoted to the study of Assyriology during the first half-year, and five hours during the second. Professor Haupt interpreted selected portions of the Babylonian Nimrod Epic, one hour weekly through the year, and in a more advanced course he explained some Sumerian Hymns and Penitential Psalms. He also conducted a class in Assyrian Prose Composition, the students rendering Hebrew and Arabic sentences into Assyrian. Professor Johnston met a class, two hours weekly through the year, for the study of Assyrian and Babylonian Historical Inscriptions, and gave a course in Elementary Assyrian, one hour weekly during the second half-year.

In Arabic a course of exercises in Arabic Prose Composition was conducted through the year by Professor Haupt. Professor Johnston met an advanced class in Arabic, one hour weekly through the year, the students reading selected portions of Brunnow's Chrestomathy of Arabic Prose-Pieces; he also gave a course in Elementary Arabic, one hour weekly, through the year. During the second half-year a course in Arabic Conversation, one hour weekly, was conducted by the Rev. Gabriel Oussani, of Baghadad.

In Ethiopic Professor Haupt interpreted the pseudepigraphic Book of Baruch, one hour weekly through the year. This was supplemented, during the second half-year, by a series of exercises in Ethiopic Prose Composition.

The instruction in Syriac was given by Professor Johnston, one hour weekly during the first half-year, Roediger's Chrestomathia Syriaca serving as text-book. During the second half-year Professor Haupt conducted a class in Syriac Prose Composition.

In Egyptology three courses were given by Professor Johnston. A class met, one hour weekly through the year, for the study of Hieroglyphic Egyptian, and one hour weekly through the year was devoted to the interpretation of Coptic texts. In the second half-year Professor Johnston conducted a course in Hieratic Egyptian, one hour weekly.

Professor Johnston also gave a course of lectures on the History of the Ancient East, with special reference to the Egyptian and Cuneiform Inscriptions, one hour weekly through the year.

A class in Persian Conversation, with exercises in Persian prose composition furnished by Professor Haupt, was conducted for some time during the first half-year by the Rev. Mr. Hawkes, of Hamadan, Persia, who had given a similar course during the session 1890-91.

Three new volumes of the critical edition of the Hebrew text of the Old Testament, published under the editorial direction of Professor Haupt, were issued during the past session, viz. the Book of Numbers, by Professor
Oriental Seminary.

J. A. Paterson, of New College, Edinburgh; the Books of Ezra and Nehemiah, by Professor Hermann Guthe, of the University of Leipzig, with additions by the Rev. L. W. Batten, Rector of St. Mark's Church, New York; and the Book of Proverbs, by the late Professor August Müller, and Professor Emil Kautzsch, of the University of Halle.

The third part of the fourth volume of the Contributions to Assyriology and Comparative Semitic Philology, published with the coöperation of the Johns Hopkins University, and edited by Professor Haupt in conjunction with Professor Friedrich Delitzsch, of Berlin, appeared before the Easter recess. It contains a valuable article by the Norwegian Assyriologist, Dr. J. A. Knudtzon, of the University of Christiania, on the Tell el-Amarna Tablets, based on a new collation of the originals in Berlin and London and including a chronological arrangement of the Letters of the Governor of Byblos, Rib-Addi, with Additions and Corrections at the end of the volume; an important paper, by Dr. Ernest Lindl, of the University of Munich, on a Chronological List of the first Babylonian dynasty including Hammurabi (about 2250 B. C.) supposed to be identical with Amraphel mentioned in the 14th chapter of the Book of Genesis, with an Appendix by Professor Delitzsch; and an interesting note by Dr. Bruno Meissner, of the University of Halle, on Falconry among the Babylonians and Assyrians.

The following papers were read by members of the Oriental Seminary at the Congress of the Affiliated Philological and Archaeological Societies, which was held at Philadelphia in December, 1900:—Professor Haupt: (a) The Mitian Wives of Amenophis III. and Amenophis IV.; (b) The Hebrew phrase nadhán rōš; (c) Corrective Interpolations in the Book of Proverbs; (d) The 1,200 Arabic, Persian, and Turkish Manuscripts recently purchased by Messrs. John W. and Robert Garrett, of Baltimore.—Mr. Blake: Intransitive Verbs in Assyrian.—Mr. Foote: Divination by Lot in the Old Testament.

At the annual meeting of the American Oriental Society, held in New York in April, 1901, seventeen papers were read by eight members of the Oriental Seminary, viz.: by Professor Haupt: (a) The Beginning of the Babylonian Nimrod Epic; (b) The Names of the Hebrew Vowels; (c) The New Volume of the Johns Hopkins Contributions to Assyriology and Comparative Semitic Philology.—Professor Johnston: (a) The Fall of Nineveh; (b) On Some hitherto Unexplained Words in Assyrian Epistolary Literature; (c) The Marburg Collection of Cypriote Antiquities recently presented to the Johns Hopkins University.—Dr. Grimm: (a) The Polychrome Lion recently found in Babylon; (b) The Meaning and Etymology of ṭāḏqāḏā in the Old Testament.—Mr. Blake: (a) The word ṣāḏ in the Sisam Inscription; (b) The Internal Passive in Semitic.—Mr. Foote: (a) The Old Testament Phrase to go a whoring after; (b) The Two Unidentified Names in the Moabite Stone.—Mr. McPherson: Gideon's Water-lappers.—Mr. Dennis: (a) An Early Egyptian Stone Cylinder; (b) A Rare Royal Cartouche.—Mr. Oussani: (a) The Arabic Dialect of Baghdad; (b) The Study
of Syriac among the Nestorians and the Jacobites. All these papers are published in Vol. XXII of the Journal of the American Oriental Society.

The following papers were read by members of the Oriental Seminary before the University Philological Society: Professor Haupt (October 19): Mesopotamian Princesses at the Egyptian Court, 1400 B. C.; Professor Johnston (February 15): Note on a Scribal Error in a Coptic Manuscript;—Dr. Grimm (February 15): Note on Prov. I, 20;—Mr. Foote (January 18): An Investigation of Lot Casting;—Mr. Oussani (April 16): Moham-medan Traditions on the Book of Genesis.


The Library and the Archaeological Collections of the Oriental Seminary received a number of valuable additions: Mr. Henry Sonneborn, of Baltimore, presented a splendid collection of Jewish ceremonial objects, and Mr. Leopold Strouse, who for several years has greatly enriched the Rabbinical branch of the Oriental Library, gave a number of interesting Hebrew manuscripts, including some of the famous fragments taken from the Genizah of Cairo. A number of Greek papyri were received from the Egypt Exploration Fund. All these collections, in conjunction with the Cohen Collection of Egyptian Antiquities and other objects of archaeological and antiquarian interest, were arranged together on the third floor of McCoy Hall, near the Oriental Seminary, so as to render them easily accessible to students.

Among the gifts to the Library of the Oriental Seminary, apart from the valuable volumes presented by Mr. Leopold Strouse, may be mentioned a collection of the most important Spanish books on the dialects, manners, and customs of the Philippine Islands.

Paul Haupt,
Professor of the Semitic Languages.
English.

1. Advanced Courses.

The English Seminary was directed by Professor Bright. Four hours per week (in two sessions) throughout the year were devoted to the study of those departments of literature of the fourteenth century that may be regarded as furnishing the most complete preparation for the study of the works of Chaucer. For the political evolution of the period, the class studied The Poems of Lawrence Minot and the Political Poems and Songs relating to English History, composed during the period from the accession of Edward III to that of Richard III. For the social and religious evolution of the period, the entire text of Piers the Plowman was critically read, with special reference also to Mensendieck’s interpretation of the Second Part. Wyclif was studied in his relation to movements for reform (Poole, Trevelyan, Wylie, etc.); attention was also given to the recent controversy respecting Wyclif’s translation of the Scriptures (Gasquet, Matthew, etc.). After these courses there followed an investigation of the works of Richard Rolle of Hampole, of Dan Michel of Northgate, of William of Shoreham, and of Robert Mannyng of Brunne.

With a view to supplementing the specific work of the Seminary, important chapters in the history of the romances were referred to the Journal Club; papers were accordingly prepared, read, and discussed on Gildas, Nennius, and Geoffrey of Monmouth; on Legamon’s Brut; on Merlin in Literature; on the Tristan and Isolde (with dependence upon Röttiger.)

The Journal Club (fortnightly, two hours) in addition to reports on the current periodicals, and in addition to the papers already named, furnished a study of the problem relating to the works of Thomas of Ercelinoune, and reviews of The Wallace and the Bruce restudied (J. T. T. Brown), The Misfortunes of Arthur (Grumbine), and of Worsfold’s Principles of Criticism.

Professor Bright conducted a class in the critical interpretation of the Anglo-Saxon version of Bede’s Ecclesiastical History (Schipper’s edition), and of the Anglo-Saxon poem Guthlac (weekly, first half-year; twice weekly, second half-year).

Throughout the year Professor Bright lectured (once a week) on technical aspects of English Grammar.

Professor Browne delivered two courses of lectures (weekly, throughout the year). One was on the Transformations of English Prose. It was shown how, from the thirteenth century, English prose, with its Teutonic substratum, has been undergoing transformations under the influence of Latin (vocabulary, grammar, and style) and French (vocabulary, grammar, and style); that the relative influences of these factors perpetually change; and that each age has found for itself a new equation, best representing the prevailing tendencies of thought and the spirit of the time. The consequent extraordinary richness of the language in modes of expression was
pointed out, with the remarkable fact that none of these equations is really absolute; that writers in the eighteenth century have resorted to Early Tudor prose, and writers of the nineteenth to prose of the Plantagenet period, perhaps not always consciously. Acquaintance with all the chief forms was insisted on as necessary for those who would acquire a mastery of English prose-writing.

The second course treated of the Influence of German upon English Literature.

2. College Courses.

The English major class met Mr. George Dobbin Brown, twice a week, through the year, for the study of Anglo-Saxon, using as a text-book Bright's Anglo-Saxon Reader.

This class also met Professor Browne twice a week. One hour weekly was given to the study of the Scottish Poets from Barbour to Lyndsay, and one hour weekly to (1) the Elizabethan literature, as that of freedom, passion, and versatility, (2) the literature of the eighteenth century, as that of law, reason, and normality.

The English minor class was conducted by Professor Browne. The class studied Early and Middle English texts (two hours a week) using Morris and Skeat's Specimens as the text-book, and English literature (two hours a week), using Arnold's Manual of English Literature.

A class in Rhetoric and English Composition met three times weekly, throughout the year. During the month of October this class was conducted by Professor Greene. Early in November the class was divided into three sections; Mr. John C. French and Mr. Raymond D. Miller assisted in the work of instruction and in the reading of manuscript. Theory was imparted by means of text-book (A. S. Hill's Principles of Rhetoric), lectures, and discussions; practice was obtained by the writing of about fifty short papers, of which a few from each set were read and criticised in the classroom, and by the writing of five essays, three of which (one in each term) were read and criticised privately with the writers. The weekly practice in writing was combined with an examination of the usage of standard writers. Each member of Section A made a careful study of the style of one prose author (usually of a nineteenth century author), and presented the results of his study in a series of short papers. The class-work included a study of representative passages of description and narration (Baldwin's Specimens of Prose Description; Brewster's Specimens of Narration). The members of Sections B and C made a careful study of specimens of standard prose, as contained in Brewster's Studies in Structure and Style, and in Lewis's Specimens of the Forms of Discourse, and presented a series of short papers containing the results of their study. The division of the class into three sections made it possible to do the work of instruction and conference with greater directness and efficiency, and to read and return manuscript with greater promptness, than ever before.
Mr. Raymond D. Miller conducted, once a week, a class in English Composition intended, primarily, to supply additional instruction for students in special need of further training. In addition to those who were required to follow the course, a number voluntarily improved the opportunity thus afforded them.

A class in English Literature met Professor Greene three times weekly, throughout the year. This class made a general survey of English Literature from the beginning to the first quarter of the seventeenth century. A detailed study was made of the works of Chaucer, Spenser, and Shakespeare. Of the writings of these poets, a considerable amount was critically studied in the class-room; and more was read by the members of the class in their private reading. Each member of the class prepared two essays and four short papers. In addition to the regular class-room exercises, five readings from the poems of Chaucer and thirteen lectures upon the dramas of Shakespeare were given for the benefit of those members who desired to attend them.

An elective course in English Literature was given by Professor Greene, twice weekly, throughout the year. During the first half-year the study was centered upon the works of Dryden, Steele, Addison, Swift, and Pope; during the second half-year, upon the works of Wordsworth, Coleridge, Keats, Shelley, and Byron. In connection with the weekly lectures and discussions the members of the class did a large amount of private reading. Each student prepared and read before the class, during each half-year, an essay upon one of the principal writers studied.

3. Public Lectures on Literature.

Frederic Harrison, M. A., Honorary Fellow of Wadham College, Oxford, delivered two lectures on King Alfred, giving an account of the approaching millenary of King Alfred and treating of his life and writings.

The ninth course of the Percy Turnbull Memorial Lectures on Poetry was given by Dr. Hamilton W. Mable, editor of the Outlook, who chose as his subject "Poetry in America," his topics being as follows: (1) The Making of the Poem; (2) The Poetry of New England; (3) Edgar Allan Poe; (4) The Poetry of the South; (5) The Middle Period; (6) The Poetry of To-day; (7) Significance of American Poetry.

JAMES W. BRIGHT,
Professor of English Philology.
WILLIAM HAMD BROWNE,
Professor of English Literature.
HERBERT EVELETH GREENE,
Collegiate Professor of English.
The German Seminary, under the direction of Professor Wood, met three times weekly, through the year. The subject during the first half year was the development of Classicism in German literature, during the period extending from Goethe’s Italian Journey to the death of Schiller. From a study of Goethe’s and Schiller’s dramas, from the ballads of 1797, and the prose essays of both authors, an attempt was made to define and characterize German literary Classicism, both in itself, and as contrasted with “Sturm und Drang” and Romanticism respectively. During the second half-year, the Parzival of Wolfram von Eschenbach was studied. The third, fourth, fifth, sixth and ninth books were read. Particular attention was paid to Wolfram’s epic style, and to the form of the Grail legend exhibited in the Parzival and Tutrul.

The Germanic Society, which is composed of the Director of the Seminary and the instructors and graduate students in German, held eleven meetings during the year, in an afternoon session. Besides reviews and reports, the following papers were read, some of them presenting completed investigations, and others giving preliminary results of studies still in progress: Two MS. copies of printed pre-Lutheran Bibles; William Tindale in Germany; Notes on Aesopic fable literature in Germany during the Middle Ages; Aufzug and Akt, a chapter in dramatic division and nomenclature; The Treatment of English literature in German periodicals of the second half of the Eighteenth Century; The pronoun of address and the pluralis majestatis in Latin and German; The Latin future in Middle High German; Strengthening Modifiers of Adjectives and Adverbs in Alemannic writers of the Thirteenth Century; The Rime Technic of Gottfried von Strassburg; The Relation of the Future to the Desiderative and Conjunctive, in the Germanic languages.

Professor Wood gave, in addition, the following graduate courses:

1. History of German Literature at the end of the Seventeenth and beginning of the Eighteenth Century. Twice weekly, during the first half-year.

The authors most closely studied were: Brookes and Hagedorn for the new lyrical poetry of nature and society, Logan, Wernike and Lessing for the Epigram, and Christian Weise for the drama. In connection with the study of Weise, the Hamburg Dramatists and Gottsched, an article entitled Aufzug and Akt, a study in the division and nomenclature of the German drama, was read by Professor Wood at the meeting of the University Philological Association in February.

2. History of Metre in Middle High German. Lectures, twice weekly, second half-year.

The metrical forms transmitted from Old High German were first considered, after which the foreign influence and the resulting complexity of
verse forms in the first classical period of German Literature (12th-13th century) were studied. The history of ascertainable facts, and the collection and consideration of a trustworthy body of metrical material, derived from the monuments themselves, were the chief object in view, rather than a formal discussion of modern theories; but examples and illustrations were, wherever possible, drawn from later periods.

3. Gothic and the Elements of Comparative German Grammar, twice weekly, through the year. Braune's *Gotische Grammatik* was studied, after which parts of Ulflas were interpreted, with Bernhardt's larger edition and Heyne-Wrede as a basis. Kluge's *Vorgeschichte der altgermanischen Dialekte* was read in part, and was accompanied by practical exercises designed to illustrate the principles of sound-change and word-formation for the several Teutonic languages.

In the undergraduate major course, Professor Wood conducted a class, twice weekly, from October to March, in Goethe's *Faust*, the First Part of which was read. In the minor course A, he conducted weekly exercises in prose composition.

Associate Professor Vos conducted a class in Middle High German, twice weekly, during the first half-year. After a study of Phonology, Inflection, and Syntax in Michels' *Mittdalters Elementarbuch*, selections were read from Henrici's *Proben der Dichtungen des Mittelalters*.

He also gave a course, twice weekly, during the first half-year, in the interpretation and criticism of *Kudrun*. The fusion, in the German poem, of various saga traditions, and the feasibility of separating the genuine from the spurious, were discussed and examined at considerable length.

During the second half-year, he gave an introductory course in Modern Dutch. The students were furnished with an outline of Dutch Grammar, in mimeographed form, prepared by the instructor. Current numbers of a Dutch bellettristic journal were used for reading.

The following undergraduate courses were conducted by Associate Professor Vos:

History of German Literature, Classical Period. (Major Course). Scherer's *History of German Literature* was used as a text-book, and illustrative extracts were read from Buschmann's *Deutsches Lesebuch II*.

In the minor course A, the following works were read in class: Baumbach, *Eraehlungen und Mdrchen*; Chamisso, *Peter Schlemihl*; Schiller, *Maria Stuart*; Goethe, *Hermann und Dorothea*. Gutzkow's *Zapf und Scheert* was assigned as private reading.

The elementary course, for students in the preliminary year, usually conducted by Associate Professor Vos, was omitted for the present year,

Dr. T. S. Baker, Professor in the Tome Institute, gave a course of lectures, weekly, through the year, on the history of the German Novel in
the seventeenth century. The development of the native German novel was studied in the *Simplicissimus* of Grimmelshausen, while Moscherosch served as a basis for the consideration of foreign influences.

Dr. William Kurrelmeyer gave undergraduate and special courses, as follows:


**Scientific German Readings.** Two hours weekly. Dippold, *Scientific German Reader* (170 pp.)

**Historical Readings.** Two hours weekly. Hoffmann, *Historische Erzählungen*; Seiler, *Die Heimat der Indogermanen*; Lange, *Athen im Spiegel der aristophanischen Komödie*.

Mr. Julius Hofmann conducted, in the major course, weekly exercises in prose composition, and classical readings in the same course during the second half-year. Schiller's *Wallenstein's Lager* and *die Piccolomini* (two acts) were read. The third part of the trilogy, *Wallenstein's Tod*, was assigned to the class as private reading. Mr. Hofmann also met a class of graduate students, twice weekly, for oral exercises in German, *Vos, Materials for German Conversation* being used as a basis. Special attention was paid to synonyms and idioms in German, and, towards the end of the course, to the recitation of German lyrics.

**Henry Wood,**

*Professor of German.*

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**Romance Languages.**

I. Graduate Courses:

Professor Elliott conducted advanced courses as follows:

**Romance Seminary.** Two hours a week, through the year.

The work centered here on the *Fables of Marie de France*, the object of the course being to acquire a working knowledge of the fable literature of antiquity and the middle ages; to become acquainted with the characteristics of the Norman and Anglo-Norman dialects in which some of the more important manuscripts are written; to present the fundamental principles of text-criticism and text-constitution, for which four fables were exam-
Romance Languages.

A clear view of the morphology and phonetics of the language was obtained as contrasted with those of the Isle-de-France. In addition to this, much new material bearing on the history of medieval fable literature was also presented. Professor Elliott directed the text-constitution and criticism in this work, while the comparative study of the selected fables was undertaken by the members of the Seminary under the supervision of Dr. Keidel, and reports were presented which embodied the chief results of the special investigations made by each student.

The object here was to give the student an introduction to the phonetics and morphology of Folk and Low-Latin as the common basis for a scientific study of the modern Romance idioms. Meyer-Lübke's treatment of the subject in Gröber's Grundriss der romanischen Philologie was taken as the starting-point for this work, in connection with which lectures were given, contrasting the popular forms with the historic development of the classical forms.

Romance Club. Weekly.
The object of this organization, to which all members of the Romance Language department belong, is to foster a common interest in everything that concerns the study of the Romance idioms. Reviews of important journal articles, papers on original investigations, discussions of literary and scientific subjects, reports of correspondence of a professional nature, represent the chief exercises that claim the attention of the club.

French Dialects. Weekly.
The dialects especially considered were the Lorraine, Burgundian and Champagne. The method of work was, to a great extent, practical, and had in view a sufficient acquaintance with dialect forms to enable the student to discriminate Old-French texts belonging to these different idioms. To this end the leading characteristics of the old and the modern dialects were presented in a few lectures: then, through the use of early and later texts, the student was required to recognize and name the dialect features as they occurred.

A brief view of general principles and of existing phonetic schools was followed by a description of the organs of speech and a detailed examination of the mode of formation of French sounds. Practical exercises.

Professor F. M. Warren, of Adelbert College, gave two courses of lectures during the months of January and February. The first course, of twenty lectures, treated of the origins and development of French Lyric Poetry in the Middle Ages. Its early history was traced by means of its few remains and references to it in contemporaneous literature. Its fixed forms were studied, both those indigenous to North France and those due to Trouba
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dour models. Finally the works of the known poets of the last half of the twelfth century were passed in review.

The other course, of six lectures, which was open to the public, was on the Romantic School of France. The general relations of the school to the artistic and social ideas of the French people were shown, and emphasized by discussions of the work and influence of Rousseau, Chateaubriand, Mme. de Stael, Nodier, Lamartine, Hugo, DeVigny, DeMusset, Dumas père, and George Sand.

Associate Professor Marden conducted the following courses:

Spanish Seminary. Two hours a week.

The work consisted of a linguistic study of the Poema de Fernan Gonzales. The basis of the work was a facsimile copy of the Escorial manuscript, several unpublished fragments in prose and verse, and the printed editions of both the Poema and the old Spanish Chronicles. Subjects in connection with the phonology, morphology, and syntax of the poem were assigned to the various members of the Seminary, who presented reports upon the results of their investigations. A special feature of the work was a study of the comparative particles que, de, and de lo que, based on material collected from the Siete Partidos and Fuero Juzgo. Finally the students made practical application of their knowledge by constructing a critical text for twenty stanzas of the poem.

Spanish Philology. Twice weekly.

The students used Gorra's Lingua e Letteratura Spagnuola delle Origini, and Baist's Disk Spanische Sprache, in connection with a course of lectures on Spanish phonology and morphology. Every fourth meeting was a quiz, for which the class studied portions of the Poema del cid, and applied to the text the laws deduced in the lectures.

Old Spanish Readings. Weekly.

The aim of the course was to give the students a reading knowledge of Spanish of the twelfth, thirteenth, and fourteenth centuries. In addition to selections from Gorra's chrestomathy, the class read in full: Lidforss' Cantares del Myo Cid, Morel-Fatio's Textos castellana inéditos du XIIIe siècle, and El Materiá de los Reyes Magos.

Lectures on the Spanish Drama of the seventeenth century. Weekly.

The opening lectures treated three important factors in the development of the Spanish drama, namely, the Inquisition, Gongousin, and the choice of Madrid as the capital of the kingdom. Then followed a discussion of Lope de Vega's position in the drama and his influence upon such writers as Terce, Alarcon, etc. The course closed with a description of the Spanish stage in the middle of the seventeenth century. The work of the year was devoted to the comedia and the period of Lope de Vega, and it was shown how and wherein Spain possessed a national drama.
Dr. Brush conducted the following courses:

Old French Phonology and Morphology. *Three hours weekly.*

The aim of this course was to give an accurate idea of the development of the vowels, consonants, and flexional forms of Old French from the equivalent forms in Popular Latin. This end was sought after by means of lectures, twice weekly, in which the forms were considered in detail, and by weekly discussions of the forms as they occurred in selected Old French texts.

Old French Readings: Class A. *Two hours weekly.*

The reading in this course was selected with reference to the lectures of the year on Old French literature. During the first semester the subject was Lyric Poetry and the texts read were Bartsch's *Romanae und Pastourelnen*, Brakelmann's *Les Plus Anciens Chansonniers français*, and Robins et Marion by Adam de la Hale. The subject for the second semester was a study of the *Romans d'Aventure*, with reading of *Le Roman de la Rose* or *de Guillaume de Dole*, *Le Chevalier à l'Épée*, and *l'Enfouyfle*. There were also given three lectures on the Manners and Customs of the Middle Ages: *Château Life, Knighthood and the Tourney*, and *Hunting and Falconry*.

Old French Readings: Class B. *Weekly.*

The object of this course was to introduce the student to Old French literature, and to fit him to pursue advanced studies in the history of the language. In order to accomplish this purpose the following texts were read, with especial attention to the form and construction: *Paris et Jeanroy: Extraits des Chroniqueurs français; Villehardouin and de Joinville; Paris: Extraits de la Chanson de Roland; The Oaths of Strassburg; La Chronique de Sainte Enfale; Aucassin et Nicolette; La Vie de Saint Alexie; Marie de France: Lais; Selections from Cliges*. Those members of the class who were also students in the English Seminary read the first four thousand lines of the *Roman de la Rose*, in place of Marie's *Eliduc*.

Dr. Ogden conducted the following course:


The object of this course was to draw the student's attention to criticism as a special and significant manifestation of French literature, and to trace the development of a type by characterizing in their mutual relations the different schools of criticism which have gradually arisen in France since the beginning of the century. Four lectures were devoted to an introduction of the subject in order that the field might be properly appreciated. The growth of the critical spirit was noted in the XVII century with its modifications from period to period. Then the line of development was carefully traced from Villemain to Sainte-Beuve, and thence through the many variations of kind in the XIX century, embracing the scientific work of Laine and Hennequin and the other offshoots from precedent.
The critics of to-day were studied severally, and the different principles advocated by Brunetière, Bourget and Lemaitre, were discussed. Each fresh factor in the progression was studied in its objective relations, rather than in any personal application, thus determining preferably the philosophic development of the literature.

Dr. Keidel conducted the following courses:

Romance Methodology. *Weekly, first half-year.*

The general principles of library research, proof-reading, thesis-writing, and bibliography were explained and fully illustrated by numerous concrete cases of actual personal experience.

Early Romance Printers. *Weekly, second half-year.*

A short and succinct account was given of the invention of printing, and the chief features of its history down to the close of the sixteenth century. The principal subjects treated were block books, styles of type, the colophon and title-page, signatures and pagination, book-plates and collectors, bibliographers and booksellers. Throughout special attention was drawn to the French, Italian and Spanish printers, and to the productions of their presses.

Dr. Shaw conducted the following course:

Lectures on the *"Origins of Italian Prose Literature."* *Weekly.*

In the first few lectures of this course the dates of the origin of the Italian speech, the means by which it came to be used in writing, and the evidence for the conclusions reached were discussed. The earliest monuments of the written language were then considered in chronological order. On reaching the second half of the thirteenth century, the original prose of the period was considered first, a typical specimen of each of the chief divisions of the literature: the encyclopedic compilations of knowledge, the collections of stories and the moral and religious treatises, being considered at length. With regard to the history, the discussion was naturally most concerned with the controversy regarding the authenticity of the chronicles attributed to this century. The chief translations from the French and the Latin were treated last. At the end of the study of each of the early monuments and of the literary works, a bibliography of the subject was given. A summary of the political and industrial history of Italy during the thirteenth century was included in the course.

II. Undergraduate Courses.

Dr. Ogden conducted the following courses:

French: Major Course. *Four hours weekly.*

The course was divided into two parts, three hours a week being given to the study of literature, and one hour to the study of advanced prose composition. The desire was to familiarize the class with the best per-
formances of French letters. The first semester was devoted to the prose writers of the XIX century; and the remainder of the time was given to the golden age of French literature. The work was supplemented by lectures. The following texts were read: DeVigny: Cinq Mars; Gautier: Le Capitaine Fracasse; Balzac: Eugenie Grandet; Loti: Selections—Le Mariage de Loti; Le Roman d’un Spahi; Mon Frère Yves, &c.; Zola: La Dëbdoe; Corneille: Horace; Racine: Phëdre; Molière: Tartuffe.

French: Minor A. Four hours weekly.

This course is designed to make the student more conversant with French idiom, and familiar with rendering French thought in English form. The important features of the work are accurate and smooth translation from French to English, equivalent and idiomatic translation from English to French, and above all an appreciation of the spirit of the language. Exercise in conversation is also practiced as well as pronunciation. The texts that are read are chosen to illustrate some feature of French literature, which is enforced by talks. The texts were: Corneille: Le Cid; Molière: Les Femmes savantes; Hugo: Hernani; Sandeau: Mlle. de la Steigleure; Dumas: L’Ami des Femmes; Scribe and Legouvé: La Bataille des Dames; Rostand: Cyrano de Bergerac; De Musset: On ne badine pas avec l’Amour.

Mr. Critchlow conducted the following course:
French: Minor B. Four hours weekly.

The purpose of the course is to acquaint the students with several specimens of standard French literature and to add that grammatical knowledge requisite to a moderate understanding of the language. The instruction has also included translation work from English into French of various passages of prose suitably arranged and of a practical character. Thus the attainment of a certain readiness in French has been accomplished together with a preparation of the student for independent pursuit in the literature.

The works read are here given in the order they were taken up: Sans Famille, Malot; Le Gendre de M. Poirier, Augier; Colombo, Mérimée; Le Consérid, Erckmann-Chatrian; Le Monde ou l’on s’ennuie, Failleron.

Dr. Brush conducted the following course:
French: Elective Course. Twice weekly.

This course is a reading course for students who have had the equivalent of a Minor. During the year the following texts were read: Bercy’s Contes et Nouvelles Modernes; Augier: La Pierre de Touche; Balzac: Scènes de la Comédie Humaine; Scribe: Le Verre d’Eau; Hugo: Selections; Gautier: Jettatura.

Dr. Shaw conducted the following courses:
French: Elementary Course. Three hours weekly.

This course was designed to ground the students in the elements of French grammar and pronunciation in preparation for the more advanced
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courses. The chief features were the recitation of rules of grammar with examples, the translation of exercises from English into French and vice versa, and the reading of simple French texts. The following textbooks were used: Grandgent's *Elements of French Grammar*; Super's *French Reader*; Enault, *Le Chien du Capitaine*; Loti, *Le Pêcheur d'Islande*; About, *Le Roi des Montagnes*.

Italian: Minor Course. *Four hours weekly.*

This course was intended to give the students a good reading knowledge of Italian with a more limited acquirement of Italian composition and pronunciation, and a general knowledge of the literature. For this purpose the grammar was carefully studied, the translation of compositions from English into Italian and from Italian into English was required, and, together with the study of a primer of Italian literature, the students passed through a course of reading of modern Italian authors, with selections from the classics. The following textbooks were used: Grandgent's *Italian Grammar and Composition*; Bowen's *Italian Reader*; De Amicis, *La Vita Militare*; Fogazzaro, *Daniele Cortis*; Goldoni, *Un Curioso Accidente*; Alfieri, *Oreste*; Tasso, *La Gerusalemme Liberata*; Ariosto, *Orlando Furioso*; Boccaccio, *Deamerone*; Dante, *Inferno*.

Italian: Elective. *Twice weekly.*

This course is devoted to those who wish for a reading knowledge of the language. At the outset, the grammar was studied carefully and the translation of exercises was required; this was continued until the end of the course, but the two latter terms were devoted chiefly to reading. The following textbooks were used: Grandgent's *Italian Grammar*; Bowen's *Italian Reader*; Del Testa, *L'Oro e l'Orpello*; Barrili, *Una Notte Bizzarra*; Serao, *All'Erta Santinella*.

Associate Professor Marden conducted the following courses:

Spanish: Minor Course. *Four hours weekly.*

After a few lessons in Manning's *Spanish Grammar*, reading was begun in Matzke's *Spanish Reader*. After the Christmas recess the class read Alarcón, *El Capitán Veneno*; Tamayo y Baus, *Un Drama Nuevo*, and Pérez Galdós, *Doña Perfecta*. Exercises in grammar and prose composition were continued throughout the first term. During the second term one meeting each week was devoted to the History of Spanish Literature, the class using Clarke's *Handbook*.


As soon as the students had mastered a few important facts in Edgren's *Spanish Grammar*, the class read selections from Matzke's *Spanish Reader*, and completed Palacio Valdés, *José*. Exercises in grammar were continued throughout the year.
Mr. Gould conducted two special courses in Spanish Conversation, as follows:

Beginners' Course. *Two hours weekly.*
The *MéTODO-BerlIta* was used as a text book.

Advanced Course. *Two hours weekly.*
This course was open to students who had a reading knowledge of Spanish. The subjects selected for discussion bore directly upon trade and commerce.

Mr. Oussani conducted the following courses:
Italian: Conversation, for beginners. *Weekly.*
In this course conversation and pronunciation were taught almost entirely by instruction, although during part of the time an elementary Italian reader was used. The most important parts of speech were first taught and afterwards general conversation of a simple kind was introduced.

Italian: Conversation, advanced. *Twice weekly.*
This course was for the use of those who already had some knowledge of Italian. Bowen's Italian Reader was used for reading and translation. Conversation was introduced early, and special emphasis was placed on pronunciation.

History, Politics, and Economics.

Since the close of the academic year this department has been compelled to record the death of two of its members.

Professor Herbert B. Adams, for twenty-five years connected with the university and for the greater part of that time director of this department, died July 30, 1901.

Associate Professor Sidney Sherwood, graduated as Doctor of Philosophy in 1891, and attached to the staff of instructors since 1892, died August 5, 1901.

More extended memorials appear elsewhere in the university publications.

The work of the department began the year under the direction of Professor Adams, but, owing to his illness and subsequent resignation, his administrative and editorial duties, after November 15, devolved upon Associate Professor J. M. Vincent.
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A new Extra Volume also appeared during the year. This was the valuable work of Professor E. Levasseur on the American Workman, translated from the French by Dr. T. S. Adams, and edited by Theodore Marburg, Esq.

An addition was also made to the series begun last year under the general title of "The Albert Shaw Lectures on Diplomatic History." To Dr. Latane's volume on the Diplomatic Relations of the United States and Spanish America, Dr. J. M. Callahan has added another on the Diplomatic History of the Southern Confederacy. The value of the matter thus far published in this duodecimo form leads to the hope that the new series will be continued.

A complete bibliography of the department of History, Politics and Economics, covering the years 1876–1901, has been prepared under the direction of Professor Adams and Dr. Vincent. This will be published as an extra number of the Historical Studies.

The Historical and Political Science Association met regularly on alternate Friday evenings and was attended by eighteen students and five instructors. The more important original work of the department was presented in these fortnightly meetings, and the current literature of history, economics, and political science was subjected to review and criticism. The proceedings from October 5 to March 15 are published in the University Circulars for January and March, 1901. Among the original papers presented by students or instructors were the following: The Formation of Government in Porto Rico, by J. H. Hollander; Federal Government in Switzerland, by J. M. Vincent; Historical Jurisprudence, by G. C. Lee; Social Justice, by W. W. Willoughby; Scientific Aspects of the Social

On February 1, the Association devoted the evening to the memory of Chief Justice John Marshall. The following papers were presented: John Marshall and Political Science, by W. W. Willoughby; John Marshall as an Historian, by W. E. Martin; The Origin of the Marshall Prize, by President Gilman; The Works of the Prize-Winners, reviewed by J. M. Vincent, George Cator, R. J. Mulford, T. J. Stubbs, J. W. Harry, O. P. McAuley, W. W. Brander.

From time to time gentlemen not connected with this University were invited to address the Association upon questions to which they had given special attention. Mr. Alfred E. Hipsley, one of the Commissioners of the Imperial Chinese Maritime Customs, read a paper on the Revenue System of China. An abstract of this address was printed in the University Circulars for January, 1901. Professor George M. Fisk, of the Tome Institute, formerly second secretary to the American Embassy in Berlin, read a paper on the Diplomatic Service of the United States. Professor David F. Houston, of the University of Texas, gave a talk upon the later aspects of the Nullification Doctrine.

Professor Herbert B. Adams began the work of the year in October, with the expectation that his health would soon be fully restored. He organized his graduate work and continued it into the month of November, when he was compelled to suspend active connection with the University. His resignation and promotion to the position of Professor Emeritus were made public on February 22, 1901.

In order to make up in part for Professor Adams's omitted courses, lecturers not connected with this University were invited to give longer or shorter courses on special topics.

Dr. Frederic Bancroft, of Washington, author of a Life of William H. Seward, gave twelve lectures on United States History from 1835 to 1861. Professor David F. Houston, of the University of Texas, gave three lectures on the history of the Nullification Movement.

Professor J. B. Moore, of Columbia University, gave two lectures on International Questions of the Day: (1) Our Treaty with Spain; (2) Our Policy in the Far East.

Poulteney Bigelow, Esq., of New York, gave two lectures on Latin Colonization and Dutch Colonization.

Professor James H. Robinson, of Columbia University, gave two lectures on the life and letters of Petrarch.

Dr. James Schouler, of Boston, gave as usual his annual lectures on American history. His subjects were in continuation of his course of last year on the Founders of the Republic. The special topics were: (1) John
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and Samuel Adams; (2) James Madison; (3) John Jay and John Marshall; (4) James Monroe.

Dr. J. M. Callahan gave four lectures on the Archives of Washington. Under his guidance, six advanced students visited the Congressional Library, the Library of the State Department, the Bureau of Rolls, the War Records Office, and other depositories of historical materials. With the kind cooperation of the gentlemen in charge of these bureaus, Dr. Callahan exhibited the nature of the collections, their special usefulness to historians, and the fields of exploration open to students.

Students of the historical department were also able to avail themselves of the lectures founded by the Maryland Society of Colonial Dames. These were given by Dr. C. W. Sommerville on biographical subjects taken from Maryland colonial history. The topics were: Sir Francis Nicholson, Daniel Dulany (the elder), Daniel Dulany (the younger), John Hanson, John Eager Howard, and Luther Martin.

Associate Professor John Martin Vincent, in addition to his administrative and editorial duties, has conducted the following courses:

1. Historical Research, with twelve graduate students, two hours weekly, during the first half-year. The various classes of historical material were defined, their relative values compared, and the method of use in each case indicated. The general rules of historical evidence, the principles which must govern the student in making up his conceptions of history, the composition of historical works, the appropriate literary style and other kindred topics were discussed. Each student received a syllabus of the lectures and prepared a complete analysis with notes and references on the subjects in the course.

2. History of Historical Writing, with twelve graduates, two hours weekly, second half-year. Beginning with the mediaeval chroniclers of France, the development of historical writing was traced down to the present day. The rise of the modern school of research in Germany; the characteristics of historians in France, England, and America; the changing aims of historical study, were some of the subjects touched upon.

3. Historical Conference, with five graduates, one hour fortnightly, throughout the year. The object of this work was to cultivate critical examination of sources and the weighing of historical evidence. Topics during the past year were chosen from the life of Alfred the Great and from the institutions of the Anglo-Saxons of that period. Frequent papers were presented by each member of the Conference and these were subjected to cooperative criticism and discussion by students and instructor.

4. European History, with twenty-six undergraduates, two hours weekly, throughout the year. This was a general course in mediaeval and modern history conducted by text-book and lectures from 800 A.D. to the close of the French Revolution. The work forms a part of "History Major."
History, Politics, and Economics.

5. Historical Politics, two hours weekly, throughout the year, with thirty-six undergraduates, not members of the Historical Group, who take this course as a part of "History-Economics." The development of government is traced from primitive times to the present day. The second half year includes a course in modern history since the Reformation.

Dr. Bernard C. Steiner has conducted a class in American Constitutional and Political History, two hours weekly, through the year, with nineteen students. Text-books were expanded by lectures and assigned reading. The origins of the United States and the development of the Constitution were reviewed down to the close of the period of Reconstruction. Reports on assigned topics were prepared by the students and careful attention was called to the sources of American history.

Dr. J. C. Ballagh gave the following courses:

1. Oral Examinations in General History, one hour weekly to December, and two hours weekly thereafter to the end of the session. The class consisted of two third-year and two second-year graduate students until December, when its number was increased to ten by the admission of six first-year graduate students. To prevent any possible deficiencies from too narrow specialization by the individual student, general history, beginning with that of Babylonia and Egypt, was consecutively and systematically reviewed. The original sources and the best exponents of ancient, medieval and modern history were discussed and used by the class as far as possible. A special course on the political history of Greece and Rome consisting of lectures, supplemented by oral and written examinations, was given in the additional hour after December.

2. Southern History, one hour weekly, through the year, with eight graduate students. The lectures were the result of original research and discussed the development of the land and labor systems of the American colonies; the peculiarities of Southern economic development and their bearing upon political history in the questions of the tariff, slavery, public lands and improvements; the creation and material development of the territory in the Southwest and West attached to the Old South; the influence of Southern agriculture upon incipient commerce and manufactures, etc. The course was a continuation of that given in 1899–1900. The sources for original work in this field were pointed out to the class, and researches in phases of the history of Alabama, South Carolina, Virginia, and North Carolina were prosecuted by members of the class.

3. Classical and European History, four hours weekly, through the year, with fifteen undergraduate and two special students. The history of Greece, Rome, and Early Europe to 800 A. D. was studied through English translations of ancient historians, such as Herodotus, Thucydides, Plutarch, Suetonius, and Xenophon, together with the best modern handbooks and authorities. Special emphasis was laid upon the study of geographical facts and conditions, also of comparative social and political
institutions. Reports embodying the results of reading on assigned topics parallel to the course were required.

4. Civilisation and Politics in the East, two hours weekly, through the year, with twenty-six students, three of whom were special students and one a graduate student. This class was taken at the request of Professor Adams, previously to his resignation. The lectures began with current politics in China and led back through her political history to the distinctive features of her civilization and her influence upon Japan and Korea. The course continued with a systematic examination of the social, political and religious institutions of the Far East as exemplified in China, Japan, and India, and of the East as shown in Chaldaea, Assyria, and Egypt. The facts and results of the contact of Eastern and Western civilizations and the causes of the present relations of oriental to other powers were carefully presented. Special reports on assigned reading on the religious and social systems of these countries, the results and influence of modern missions, governmental reforms, and institutions were required at stated times, and the lectures were supplemented by frequent oral examinations. The oriental collections of the University and private sources afforded valuable illustrative material for class use.

Dr. Guy Carleton Lee has conducted a course in English Political and Constitutional History (two hours weekly), which was followed by sixteen students; a course in Historical Jurisprudence (one hour weekly), followed by five graduate and five undergraduate students; a course introductory to the study of Law (one hour weekly), followed by nineteen students.

Dr. Lee has, with the assistance of Mr. W. B. Carver and Mr. R. Z. Thomas, continued instruction in Public Speaking; (1) A course in Parliamentary Practice and Debate (one hour bi-weekly), alternating with a conference on the same subjects, which has been followed by forty-one seniors; (2) A course in Parliamentary Law and Debate (one hour bi-weekly), alternating with a conference on the same subject, which has been followed by forty-five students of the second year; (3) three courses (one hour weekly each), in the Elements of Public Speaking attended by fifty-eight undergraduates, principally men of the first year; (4) three courses (one hour weekly each), in the Elements of Parliamentary Law, followed by fifty-eight students.

Politics.

Associate Professor W. W. Willoughby has conducted the following courses:

1. History of Political Theories, 1300 to 1750 A. D., with twelve graduate students, two hours weekly, throughout the year. The political ideals and principles of this period were analyzed and criticized. An especial effort was made to show the extent to which these theories were the outcome of the
political conditions and general characteristics of the times in which they were formulated.

2. *Advanced United States Constitutional Law*, with eleven graduate students, two hours weekly, throughout the year. These lectures presupposed a general knowledge of our political history and of the elements of our public law, and were therefore devoted to the discussion of the more perplexing and as yet unsettled points in our constitutional law, the illustrations being largely drawn from the decisions of the U.S. Supreme Court during the last few years. Special attention was given to the examinations of the legal problems involved in the annexation and government of foreign territories. Carefully prepared written analyses of the leading cases considered were required of the students.

3. *Political Conference*, fortnightly, with ten graduate students, throughout the year, devoted to the consideration of problems of colonial government and administration. Carefully prepared papers were read by the students and discussed.

**Economics.**

Associate Professor Sherwood had supervision of the work in Economics and conducted the following courses:

1. *Economic Seminary*, meeting two hours fortnightly, with eight graduate students. The special study of Commerce and Commercial Policy of the United States has been continued, in part by the preparation of papers and in part by the critical study of List's *National System of Political Economy*. Papers upon other topics were also read and reviews were given of current economic literature. Some of the papers read before the Seminary were the following: "The Tariff History of the United States," by George Cator; "Statistics of State Banks since 1863," by G. E. Barnett; "The Financial Theories of Thomas Jefferson," by Horace Campbell; "The Ship Subsidy Bill," by H. S. Hanna; "Review of Masayoshi's Adoption of the Gold Standard in Japan," by S. Sherwood (Political Science Quarterly, March, 1901); "The Currency Bill," by G. E. Barnett.

2. *Modern Banking*, two hours weekly, first half-year, with ten graduate students. A comparative study of the banking systems of England, France, Germany, and the United States was made. Attention was directed to the internal organization of the central banks and their relation to the other banking institutions of their respective countries, to the present status of the business done by the banks, and to the relation of these banks to the government. Conclusions were drawn from these studies as to the tendencies in modern banking, and certain needed reforms in the American system were pointed out.

3. *Theory of Credit*, with six graduate students, two hours weekly, second half-year. Analysis of credit was made so as to indicate the operation of credit in its economic rather than in its legal aspect. The part played by credit in productive organization and processes was then traced. The
adequacy of present credit institutions to meet the requirements of the various classes of industry was also discussed, as well as the relation of credit to prices. The course was closed with a brief review of the historical development of the theory of credit.

4. The Law of Economic Development, with eight graduate students, one hour weekly, through the year. This course was an examination of the law of evolution as applied to economic life. The basis of this application is found in the fact that social activity and organization begin in the want and will of individuals, and that these are governed by an economic or utilitarian principle which leads men to act so as to secure the greatest satisfaction with the least sacrifice. The operation of this principle was shown in military, political, and religious life, as well as in industrial activity. Individual variation, which begins change, in itself an illustration of this law and the new social organization which results, is evolved from these utilitarian choices and efforts of the individuals. Division of labor, the varying forms of industrial organization and the growth of capital are all to be explained in the same way.

5. Advanced Economics, two hours weekly, through the year, attended by ten undergraduates and one graduate student. The recent tendencies in economic organization were studied, with Hobson's Growth of Capitalism as the text-book during the first half-year. The second half was devoted to a critical study of recent theory based on J. B. Clark's Theory of Distribution.

In the absence of Associate Professor Hollander, as Treasurer of Porto Rico, the two following courses of lectures for graduates were substituted for the two-hour course announced by him.

1. Mr. W. F. Willoughby, of the United States Bureau of Labor, lectured on Labor Problems to ten graduate students, two hours weekly, during the first half-year.

This course was devoted primarily to a study of the group of movements having for their purpose the increase in the economic security of the laboring classes. Each of the contingencies was considered in which workingmen are unable to earn wages, as disability, sickness, accident, premature invalidity, old age, and inability to obtain work, and the efforts now being made in Europe and the United States for providing for them through insurance or otherwise. A few lectures were also given on the organization and practical work of statistical bureaus in various countries.

2. Dr. E. Dana Durand, Secretary of the United States Industrial Commission, on leave of absence from Stanford University, lectured on American Financial History, to a class of six graduate students, two hours weekly, during the second half-year. The course covered the history of the public finances of the United States Government, from the beginning of the Revolution to 1890. The development of the customs duties and of other methods of taxation was traced and the policy of debt management was discussed. The history of the currency and banking system was also
Philosophy.

considered in so far as it bears on the general subject of the administration of the public treasury. The students did collateral reading from a number of original documents and of secondary treatises, and each of them presented a paper on some phase of financial history.

Dr. George E. Barnett has conducted the following undergraduate courses:

1. *Elements of Economics*, a two-hour course, attended by fifty-two students. The subjects treated were the elementary principles of economics, the first half-year, and money and taxation, the second half-year. This course is a part of "Minor Economics" and also of "History-Economics."

2. *Economic History of the United States; Economic Thought*,—two hours weekly, attended by seventeen students. The nature of the work is indicated by the title. The course constituted the second half of "Minor Economics."

Social Science.

Dr. Jeffrey R. Brackett conducted a course of ten lectures on Problems of Public Aid, Charity, and Correction, with particular reference to conditions in the United States.

The aim of the lectures was thoroughly practical, pointing out the growing opportunities for social service in charitable and correctional work. The course began on November 6 and continued on successive Tuesdays at five o'clock in the Donovan Room of McCoy Hall. The attendance included students and interested persons from the general public.

'J. M. Vincent,
Associate Professor of History.'

Philosophy.

Undergraduate courses in Logic, Psychology, Ethics, and the History of Philosophy, and a graduate course in the History of Philosophy, have been conducted by me during the academic year 1900-1901.

Each candidate for the degree of Bachelor of Arts is required to attend, during the last year of residence, courses in philosophy occupying five hours a week. The several subjects are distributed through the year as follows: Deductive and Inductive Logic, October 1 until the Christmas recess; Psychology, January 1 to April 1; Ethics, April 1 to June 1; Outlines of the History of Philosophy, weekly. It is intended to adapt the instruction, as far as possible, to the needs of those to whom these studies are new; attention is, however, called to fundamental problems, and the work is intended to serve as an introduction to general philosophical study. Text-books are used in each subject, as affording definite
material of acquisition, but informal lectures, discussions in the class, and
passages from various authors assigned for reading, are largely relied upon
in the presentation. Each member of the class is required to prepare two
essays. Forty-three students have been in attendance during the year.
Creighton's Introductory Logic has been the basis of instruction, this year,
in Logic, with references to the works of Mill, Bain, Jevons, and other
writers.
In Psychology, Baldwin's Elements of Psychology and Ladd's Outlines of
Physiological Psychology have been used as text-books, supplemented by
many references to the works of other authors. A series of lectures on the
anatomy and physiology of the nervous system was given, as a part of the
course, by Dr. C. R. Bardeen.

Ethics was treated with reference to its fundamental problems as a theo-
retical science, and also from a practical point of view. Some of the topics
discussed are the following: The psychological basis of ethics in the vari-
ous forms of feeling native to our constitution, and in the power of rational
self-determination; the nature of the sense of obligation; the authority of
conscience; the diversities of moral opinion; the historic theories of
morals—hedonism, utilitarianism, intuitionism, and the application to
was employed as a text-book, but the instruction was given, to a consider-
able extent, through lectures.

One hour each week was used during the first half-year, for a brief out-
line of the History of Philosophy, and the survey was brought down, in a
summary way, to the modern period. During the latter part of the year,
a weekly lecture was given for the benefit of those able to attend it as a
voluntary exercise.

For some years past it has been customary to invite, toward the end of
the year, three or four gentlemen to address the class for the purpose of
presenting considerations likely to be serviceable to them in the choice of
a vocation. Professor W. H. Howell, Gen. Lloyd L. Jackson, and Henry
J. Bowdoin, Esq., kindly rendered this service. At the request of the class,
the President of the University addressed them on the day after the close
of the work of the year.

A course in the History of Philosophy, for graduate students, was conducted
during the year, consisting of the reading and discussion of representative
works in modern philosophy, from Descartes to Kant. The lectures pre-
supposed the reading of the following works: Bacon's Novum Organum,
book i and a part of book ii; Descartes' Method, Meditations and Principles
of Philosophy; Spinoza's Ethics; Leibnitz's Monadology; Locke's Essay on
Human Understanding, books i, ii, iv; Berkeley's Principles of Human
Knowledge; Hume's Treatise on Human Nature, book i; a portion of Kant's
Critique of Pure Reason.

Edward H. Griffin,
Professor of the History of Philosophy.
Drawing.

The following report of the work of the undergraduate classes in Drawing, during the year 1900-1901, is respectfully submitted:

The course of instruction was, for the first half-year, drawing from simple geometrical forms, beginning with outline and working up to more complicated groups of figures in light and shade. A knowledge of free-hand perspective was also included in this early instruction.

In the second half-year the classes were divided; students looking forward to courses in Medicine or Biology continued the work of drawing bones and other natural specimens in order to give them a knowledge of the practical application of drawing in the illustration of lectures in these studies. The practical worth of this work has been commended by several of the instructors in the anatomical department of the Johns Hopkins Hospital.

A class for special students was held during the entire year for advanced work in mechanical drawing.

S. Edwin Whiteman,
Instructor in Drawing.
## TABULAR STATEMENT OF COURSES OF INSTRUCTION, 1900-01.

<table>
<thead>
<tr>
<th>INSTRUCTORS</th>
<th>COURSES</th>
<th>No. of hours per week</th>
<th>No. of students, 1st half-year</th>
<th>No. of students, 2nd half-year</th>
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<td><strong>MATHMATICS.</strong></td>
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<tr>
<td>Morley.</td>
<td>Theory of Functions: Adv.</td>
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<tr>
<td>Morley.</td>
<td>Geometry.</td>
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<td>Morley.</td>
<td>Mathematical Seminary.</td>
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<tr>
<td>Cohen.</td>
<td>Theory of Functions: Elem.</td>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Cohen.</td>
<td>Transformation Groups.</td>
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<tr>
<td>Cohen.</td>
<td>Theory of Numbers.</td>
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<td>Cohen.</td>
<td>Contact Transformations.</td>
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<tr>
<td>Cohen.</td>
<td>Differential Equations: Adv.</td>
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<tr>
<td>Hulburt.</td>
<td>Determinants; Calculus; Theory of Equations.</td>
<td>4</td>
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<tr>
<td>Hulburt.</td>
<td>Projective Geometry; Solid Analytic Geometry.</td>
<td>4</td>
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<tr>
<td>Hulburt.</td>
<td>Analytic Geometry: Minor Course.</td>
<td>4</td>
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<tr>
<td>Hulburt.</td>
<td>Differential and Integral Calculus.</td>
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<td>Coble.</td>
<td>Elementary Solid Geometry.</td>
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<tr>
<td>Coble.</td>
<td>Trigonometry; Analytic Geometry: Elem.</td>
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<tr>
<td>Rowland, Ames.</td>
<td>Electricity and Magnetism.</td>
<td>5</td>
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<tr>
<td>Dorsey, Rowland.</td>
<td>Journal Meeting.</td>
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<tr>
<td>Ames.</td>
<td>Physical Seminary.</td>
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<td>Ames.</td>
<td>Physical Optics.</td>
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<td>Ames.</td>
<td>Thermodynamics.</td>
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<td>Bliss, Whitehead.</td>
<td>General Physics: Major Course.</td>
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<td>Ames.</td>
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<td>Whitehead, Dorsey.</td>
<td>Applied Electricity.</td>
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<tr>
<td>Rowland, Ames, Bliss, Whitehead, Huff, Ames, Pender.</td>
<td>Electricity and Gases.</td>
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<td></td>
<td>Laboratory Work.</td>
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<tr>
<td><strong>CHEMISTRY.</strong></td>
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<tr>
<td>Remsen.</td>
<td>Carbon Compounds.</td>
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<td>Remsen.</td>
<td>Journal Meeting.</td>
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<td>Morse.</td>
<td>Inorganic Chemistry: Major Course.</td>
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<td>Morse.</td>
<td>Organic Chemistry: Major Course.</td>
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<td>Remout, Gilpin.</td>
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<tr>
<td>Jones, H. C.</td>
<td>Physical Chemistry.</td>
<td>3</td>
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<td>Jones, H. C.</td>
<td>Physical Chemistry: Conference.</td>
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## Tabular Statement of Courses.

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<thead>
<tr>
<th>COURSES</th>
<th>No. of hours per week</th>
<th>No. of students, 1st half-year</th>
<th>No. of students, 2d half-year</th>
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<tr>
<td>Laboratory Work.</td>
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### GEOLOGY AND MINERALOGY.

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<tr>
<td>Paleontology.</td>
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<td>Paleontology : Laboratory Work.</td>
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<tr>
<td>General Geology.</td>
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<td>Geological Surveying.</td>
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<tr>
<td>Petrography.</td>
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<td>6</td>
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<tr>
<td>General Mineralogy.</td>
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<td>Journal Club.</td>
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<tr>
<td>Stratigraphic and Structural Geology. (March-May.)</td>
<td>2</td>
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<td>Climatology. (October-November.)</td>
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### BIOLOGY.

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<tr>
<td>Zoology : Advanced Course.</td>
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<td>Zoological and Botanical Journal Club.</td>
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<td>Zoology and Comp. Anat.: Major Biology. (Till April 1)</td>
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<tr>
<td>Physiological Journal Club.</td>
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<td>Physiological Seminary.</td>
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<tr>
<td>Animal Physiology: Advanced. (Lectures and Laboratory.)</td>
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<tr>
<td>Physiology of Respiration and Central Nervous System.</td>
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<td>Physiology of the Tissues, Digestion, and Nutrition.</td>
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<td>Embryology : Major Biology. (After April 1.)</td>
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<tr>
<td>General Biology. (Till April 1.)</td>
<td>2</td>
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<tr>
<td>Morphology of Plants.</td>
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<td>Physiology and Histology of Plants.</td>
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<td>Botany : Elective Course.</td>
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<td>Botany : Major Biology. (Till April 1.)</td>
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### GREEK.

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<tr>
<td>Greek Seminary : Attic Orators.</td>
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<td>Greek Rhetoric.</td>
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**GERMAN.**

**Romance Languages.**

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**ENGLISH.**

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| SHERWOOD | } |
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| WILLoughby, W. F. | } |
| DURAND | } |
| BARNETT | } |
| BARNETT | } |
| BARNETT | } |

**HISTORY, POLITICS, AND ECONOMICS.**

| ADAMS | Historical Seminar. (Alternate weeks.) | 2 | 21 | 18 |
| ADAMS | Greek Politics. | 2 | 13 | |
| ADAMS | Educational Conference. | 1 | 11 | |
| ADAMS | History of Civilization. | 2 | 23 | 26 |
| VINCENT | Historical Conference. | 1 | 3 | 3 |
| VINCENT | Historical Research. | 2 | 10 | 10 |
| VINCENT | European History. | 2 | 25 | 25 |
| BALLAGH | Historical Politics. | 2 | 33 | 33 |
| BALLAGH | General History Examinations. | 2 | 5 | 5 |
| BALLAGH | Southern History. | 1 | 8 | 8 |
| SHERWOOD | Classical and Early European History. | 4 | 19 | 17 |
| SHERWOOD | Economic Seminary. (Alternate weeks.) | 2 | 9 | 9 |
| SHERWOOD | Banking. | 2 | 10 | 4 |
| SHERWOOD | Economic Development. | 1 | 8 | 6 |
| SHERWOOD | Theory of Credit. | 2 | 6 | |
| SHERWOOD | Recent Economic Changes and Theories. | 2 | 19 | 11 |
| WILLoughby, W. F. | Labor Problems; Social Economics. | 2 | 10 | |
| DURAND | American Finance. | 2 | 7 | |
| BARNETT | Industrial Growth of the U. S. | 2 | 18 | 18 |
| BARNETT | Economic Thought. | 2 | 54 | |
| BARNETT | Elements of Economics. | 2 | 54 | |
**Tabular Statement of Courses.**

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<td>Willoughby, W.W.</td>
<td>Political Conference. (Alternate weeks.)</td>
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<td>Steiner.</td>
<td>American Political and Constitutional History.</td>
<td>2</td>
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<td>Lee.</td>
<td>English Political and Constitutional History.</td>
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<td>Lee.</td>
<td>Historical Jurisprudence.</td>
<td>1</td>
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<td>Lee.</td>
<td>Introduction to the Study of Law.</td>
<td>1</td>
<td>19</td>
<td>17</td>
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<tr>
<td>Schouler, J.</td>
<td>Founders of the Republic. (Four lectures.)</td>
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<td>Brackett, J. R.</td>
<td>Problems of Public Aid, Charity, and Correction. (Ten lectures.)</td>
<td>19</td>
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<tr>
<td>Bancroft, F.</td>
<td>United States History, 1840-1861. (Twelve lectures.)</td>
<td>2</td>
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<tr>
<td>Houston, D. F.</td>
<td>The Nullification Movement. (Three lectures.)</td>
<td>2</td>
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<tr>
<td>Moore, J. B.</td>
<td>Current International Questions. (Two lectures.)</td>
<td>19</td>
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<tr>
<td>Bigelow, P.</td>
<td>Latin and Dutch Colonization. (Two lectures.)</td>
<td>19</td>
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<tr>
<td>Robinson, J. H.</td>
<td>Life and Letters of Petrarch. (Two lectures.)</td>
<td>19</td>
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<tr>
<td>Callahan.</td>
<td>Archives of Washington. (Four lectures.)</td>
<td>10</td>
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**PHILOSOPHY.**

| Griffin.             | History of Philosophy.                      | 1                     | 5                         | 5             |              |
| Griffin.             | Logic. (Until December 21.)                 | 5                     | 44                        | 44            |              |
| Griffin.             | Psychology. (January 2 to April 3.)        | 5                     |                            | 43            |              |
| Griffin.             | Ethics. (After April 10.)                  | 5                     |                            | 43            |              |

**DRAWING.**

| Whiteman.            | Freehand, Constructive, and Perspective Drawing. | 6                     | 64                        | 62            |              |
| Whiteman.            | Special Work.                                 | 6                     | 5                         | 3             |              |

**FORENSICS AND ELOCUTION.**

| Lee.                 | Parliamentary Practice. (Alternate weeks.)   | 1                     | 41                        | 40            |              |
| Lee.                 | Parliamentary Law.                           | 1                     | 46                        | 45            |              |
| Lee.                 | Elements of Public Speaking.                 | 3                     | 58                        | 56            |              |
DEGREES CONFERRED, 1900-01.

Doctors of Philosophy.


Observations on the Gametophyte and Embryo of Taxodium Distichum. 
Referees on dissertation: Professor Brooks and Dr. D. S. Johnson.

Winterton Conway Curtis, of The Dalles, Oregon, A.B., Williams College, 1897. 

Waverley Bayard Daniel, of Wake Forest, N. C., A. M., Wake Forest College, 1892. 


James Marion Farr, of Union, S. C., A. B., Davidson College, 1894. 

Joseph Christie Whitney Frazer, of Lexington, Ky., S. B., Kentucky State College, 1897. 

Francis LeJau Frost, of Charleston, S. C., General Theological Seminary (N. Y.), 1897. 

Norman Everett Gilbert, of Middletown, Conn., A. B., Wesleyan University, 1895. 

Roscoe Guernsey, of East Cobleskill, N. Y., A. B., Union College, 1896. 

Fred Cole Hicks, of Tipton, Iowa, Ph. B., Cornell College, 1896. 


Degrees Conferred.

Doctors of Medicine.

Alexander Montague Atherton, of Honolulu, Hawaii, A.B., Wesleyan University, 1897.
Frederick Harry Baetjer, of Winchester, Va., A.B., Johns Hopkins University, 1897.
William Dwight Baldwin, of Haiku, Hawaii, A.B., Yale, 1897.
John McWilliams Berry, of Peterboro, N. Y., S.B., Cornell, 1897.
Walter Herbert Blakeslee, of Coatesville, Pa., A.B., Amherst, 1897.
Horace Dechamps Bloombergh, of Easton, Pa., A.B., Lafayette, 1897.
Thomas Richmond Boggs, of Baltimore, S.B., Univ. of Georgia, 1896.
John Robert Bosley, of Baltimore, A.B., Western Maryland, 1896.
Charles Henry Bunting, of La Crosse, Wis., S.B., University of Wisconsin, 1896.
Joel Ives Butler, of Meriden, Conn., Ph.B., Yale University, 1897.
Harry Wardell Carey, of Stamford, Conn., A.B., Yale University, 1897.
Eleanor Sarah Chace, of Fall River, Mass., S.B., Wellesley College, 1894.
Robert Thornton Comer, of James, Ala., A.B., Univ. of Alabama, 1896.
Ray Connor, of Detroit, Mich., A.B., Williams College, 1897.
George Silas Drake, Jr., of St. Louis, Mo., A.B., Yale University, 1897.
Adelaide Dutcher, of Madison, Wis., S.B., University of Wisconsin, 1897.
Henry Atwood Fowler, of Minneapolis, Minn., S.B., University of Minnesota, 1895.
Frederick Parker Gay, of Boston, Mass., A.B., Harvard, 1897.
Neil Duncan Graham, of Falls Church, Va., A.B., Johns Hopkins University, 1897.
Gardner Wells Hall, of Newton, Mass., A.B., Harvard University, 1898.
Louis Virgil Hamman, of Baltimore, A.B., Rock Hill College, 1896.
Rolland Frederick Hastreiter, of Madison, Wis., S.B., University of Wisconsin, 1897.
Joseph Henry Hathaway, of Grinnell, Iowa, A.B., Iowa College, 1894.
James Morley Hitzrot, of McKeensport, Pa., A.B., Princeton, 1897.
Gerry Rounds Holden, of Baltimore, A.B., Yale University, 1897.
Edward Hicks Hume, of Bombay, India, A.B., Yale University, 1897.
William Bernard Johnston, of Washington, D.C., A.B., Harvard University, 1897.
Harry M. Kaufman, of Washington, D.C., A.B., Johns Hopkins University, 1897.
Theodore Lamson, of Boston, Mass., Ph.B., Yale University, 1897.
Dwight Milton Lewis, of New Haven, Conn., A.B., Yale, 1897.
Warfield Theobald Longcope, of Baltimore, A.B., Johns Hopkins University, 1897.
William Harvey Maddren, of Brooklyn, N. Y., S.B., Brooklyn Polytechnic Institute, 1896.
Degrees Conferred.

Elizabeth Sutton Moore, of Brookville, Pa., S.B., Wilson College, 1895.  
Henry Pickering Parker, of Howard County, Md., A.B., Johns Hopkins University, 1896.  
Maurice J. Rubel, of Chicago, Ill., S.B., University of Chicago, 1897.  
John Cleveland Salter, of Carbondale, Ill., A.B., Yale University, 1897.  
Mabel Palmer Simis, of Vail's Gate, N.Y., S.B., Cornell, 1897.  
Josiah Morris Siemons, of Salisbury, Md., A.B., Johns Hopkins University, 1897.  
Herbert Meloy Smith, of Salem, Va., A.B., Roanoke College, 1892.  
Charles Nelson Spratt, of Minneapolis, Minn., S.B., University of Minnesota, 1897.  
Albert Louis Steinfeld, of Baltimore, A.B., Johns Hopkins, 1897.  
Carlotta Mary Swett, of Bangor, Me., A.B., Wellesley College, 1896.  
Henry Ludwig Ulrich, of Newark, N.J., S.B., Rutgers College, 1897.  
Albert James Underhill, of Baltimore, A.B., Johns Hopkins, 1897.  
Marion Barthowal Walker, of Cambridge, Mass., A.B., Radcliffe, 1898.  
Louis Marshall Warfield, of Savannah, Ga., A.B., Johns Hopkins University, 1897.  
George William Warren, of Portland, Me., A.B., Johns Hopkins University, 1897.  
Stephen Hurt Watts, of Lynchburg, Va., A.M., Randolph-Macon College, 1898.  
Ernest Alden Wells, of Hartford, Conn., A.B., Yale University, 1897.  
John Montgomery West, of Baltimore, A.B., Johns Hopkins, 1896.  
Charles Knickerbacker Winne, Jr., of Baltimore, A.B., Johns Hopkins University, 1897.

Bachelors of Arts.

Ronald Taylor Abercrombie, of Baltimore.  
Hollis Roswell Baker, of Aberdeen, Md.  
Leon Kahn Baldauf, of Henderson, Ky.  
John Martin Bandel, of Baltimore.  
Bertram Moses Bernheim, of Louisville, Ky.  
Andrew Reid Bird, of Baltimore.  
John Manning Booker, of Baltimore.  
Norman Boyer, of Baltimore.  
John Strath Briscoe, of Baltimore.  
Ernest Bonsall Brown, of Church Hill, Md.  
Alfred William Bruton, of Baltimore.  
Mortimer Bye, of Baltimore.  
Harry Stephenson Byrne, of Baltimore.  
George Cator, of Baltimore.  
Kosciusko Walker Constantine, of Birmingham, Ala.  
Frederick Richard Dapprich, of Milwaukee, Wis.
Degrees Conferred.

Aaron Ember, of Baltimore.  
Leyburn Grear Fishach, of Baltimore.  
John Frederick Gray, of New York City.  
Ernest Cummins Hatch, of Lutherville, Md.  
Lee Milton Hollander, of Baltimore.  
Walter Isaac Kohn, of Louisville, Ky.  
Eugene Joseph Leopold, of Baltimore.  
Edward Lowndes, of Howard County, Md.  
John Gresham Machen, of Baltimore.  
Robert Brooks Morse, of Baltimore.  
Edward Richards Noble, of Johnstown, Pa.  
George Edward Rehberger, of Baltimore.  

John Adelbert Riggins, of Pennsgrove, N. J.  
Forrest Shreve, of Easton, Md.  
William Payne Shriver, of Baltimore.  
Guy Everett Snavely, of Baltimore County, Md.  
Lindsay Coleman Spencer, of Baltimore.  
Julian Samuel Stein, of Baltimore.  
Otto Albert Struth, of Baltimore.  
Walter B. Swindell, Jr., of Baltimore.  
James Edward Tyler, Jr., of Baltimore.  
Henry Michael Warner, of Baltimore.  
Augustus Price West, of Baltimore.  
Horace Slingluff Whitman, of Baltimore.  
Marcus Wilton Wolf, Jr., of Baltimore.  

(41)
REPORT ON THE OFFICIAL STATE BUREAUS CONNECTED WITH THE JOHNS HOPKINS UNIVERSITY.

TO THE PRESIDENT OF THE JOHNS HOPKINS UNIVERSITY:

I herewith submit for your information the following statement regarding the work of the Maryland Geological Survey and Maryland Weather Service during the past academic year. The investigations of these bureaus are so closely identified with the work of the geological department that the results obtained properly constitute a part of the investigations of the University.

MARYLAND GEOLOGICAL SURVEY.

The Maryland Geological Survey has now been in operation somewhat over five years, having been established by an act of the General Assembly in March, 1896. Professor Clark has been State Geologist since the organization of the Survey. The original appropriation of $10,000, annually provided by the General Assembly of 1896, was increased by the passage of two additional acts in 1898, establishing a Division of Topography, with an appropriation of $5,000 annually, and a Highway Division, with an appropriation of $10,000 annually, making the combined resources of the Survey at the present time $25,000 a year.

The work of the Survey during the past year has embraced a wide field of investigation in which geology, topography, physiography, terrestrial magnetism, agriculture, forestry, and highway engineering have formed conspicuous parts.

The geological work, which is directly under the charge of the State Geologist, is divided into three divisions, Dr. E. B. Mathews, the Assistant State Geologist, being Chief of the Division of the Piedmont Plateau, Professor Charles S. Prosser, of the Division of the Appalachian Region, and Dr. G. B. Shattuck, of the Division of the Coastal Plain. Dr. Mathews has made much progress during the year in the mapping of the crystalline rocks of Harford County, where he has had as assistant Mr. A. Johannsen.

Dr. Shattuck and his assistant, Mr. B. L. Miller, have completed the mapping of the Miocene and Pleistocene deposits of Cecil and Prince George's counties. Mr. A. Bibbins has also continued his study of the
Potomac formation. In western Maryland Dr. Martin has completed the mapping of the geological formations of Garrett county, and has also done much work in the collection of data for the Carboniferous and Coal reports.

Investigations have also been in progress by a number of distinguished American experts on the faunas and floras of the Devonian, Miocene, and Lower Cretaceous of Maryland, and the results of this work will be later incorporated in the stratigraphic reports.

The Highway work of the Survey has been continued during the past year under the direction of Dr. H. F. Reid, Chief of the Division of Highways, who has had associated with him in his work Messrs. A. N. Johnson and J. Morrison Harris as highway engineers. The highway report which was prepared two years ago has been extensively distributed, the demand for the volume from outside the State, as the result of the numerous favorable reviews, being still very great. A number of roads have been supervised by the highway engineers, while tests of road-metals have been made for numerous public and private interests. Samples of the vitrified brick and crushed stone now being used by the city of Baltimore are submitted to the Highway Division before the contracts are let, and tests are made of the materials as they are furnished. The value of this phase of the work is much appreciated. The Highway Division has also carried on tests of the strength of cements for the benefit of state and city engineers.

The agricultural soils of the State have been studied during the past year under a plan of cooperation with Professor Milton Whitney, Chief of the Division of Soils of the U. S. Department of Agriculture. In this work the Survey is also associated with the Maryland Agricultural Experiment Station, so that all three bureaus are closely cooperating. Detailed soil maps have already been prepared of Allegany, Garrett, and Cecil counties by Mr. C. W. Dorsey, and of Calvert and St. Mary's counties by Dr. J. A. Bonsteel. The work in Prince George's county is now in progress.

A study of the hydrography of the State has also been taken up in cooperation with the Division of Hydrography of the U. S. Geological Survey, through Mr. F. H. Newell, the Chief of the Division. This work is carried on jointly by the Maryland Geological Survey and the Maryland Weather Service, and already many gauges have been established and records secured from the leading streams of the State. A report has already been prepared by Mr. Newell on the hydrographic conditions of Allegany County.

The forestry conditions of the State, which are recognized to depend in no small degree on the physiographic and geologic features, have been taken up for study, in cooperation with the Bureau of Forestry of the U. S. Department of Agriculture, through its chief, Mr. Gifford Pinchot. Already a complete forestry survey has been completed for Allegany county, as the result of this cooperation, by Mr. G. E. Sudworth, and work is now in progress in Garrett and Cecil counties.
Magnetic work, under the charge of Dr. L. A. Bauer, who is now Chief of the Division of Terrestrial Magnetism of the U. S. Coast and Geodetic Survey, has been continued in various portions of the State, and provision made for the establishment of meridian lines in those counties where this work had not already been done. Dr. Bauer has already prepared a report on the magnetic declination in Allegany county and is also engaged on similar reports for Garrett and Cecil counties.

The Maryland Geological Survey was requested by the Maryland Commissioners to the Pan-American Exposition to direct the formation of an exhibit of the mineral resources of the State, and Professor Clark, with the aid of Dr. Mathews and Mr. H. H. Hindshaw, devoted much attention to the formation of a large collection of Maryland products which is now on exhibition in Buffalo.

The constant demand for the publications of the Survey has practically exhausted the editions of Volumes I and II, so that the Survey is no longer distributing these reports. Volume III, relating to the highways, was published in an unusually large edition and these reports are still being extensively distributed. Two volumes, each the first of a new series, were published during the year, one a report on Allegany County, and the other a report on the Eocene. Volume IV of the Geological Survey reports is already partly in press, while parts of manuscripts of other volumes are ready for the printer.

MARYLAND WEATHER SERVICE.

The Maryland Weather Service has now been in operation for over ten years, having been established in May, 1891, under the joint auspices of the Johns Hopkins University, the Maryland Agricultural College, and the U. S. Weather Bureau. It became an official organization by an act of the General Assembly which was approved by the Governor on April 6, 1892. Under the authority granted by this act the State Service became permanently established at the Johns Hopkins University, under the direction of a Board of Control commissioned by the Governor. The appropriation for the maintenance of this bureau is $2,000 annually, the fund being used for publications and for such apparatus as may be necessary for the special investigations to which the service is now devoting its attention.

The investigations of the Maryland Weather Service are broad in their scope, and include not only meteorology in its narrower sense, but also physiography, medical climatology, agricultural soils, hydrography, forestry, and distribution of the life-zones of the State. Much work was carried on in several of these lines during the past year, either independently or in association with the Maryland Geological Survey. The cooperation granted by the U. S. Department of Agriculture, through the chiefs of its various bureaus and divisions, has been of special significance. The cordial sup-
Report which has been given to the work, especially by Professor Willis L. Moore, Chief of the U. S. Weather Bureau, and Hon. Charles D. Walcott, Director of the U. S. Geological Survey, has rendered it possible to add much to our knowledge of Maryland climatological conditions. At the same time the cordial relations existing between the Weather Service and the State agricultural institutions have produced valuable results in many lines, and already plans are formed for much more extensive cooperation.

The Maryland Weather Service completed somewhat over a year ago the first volume of its reports dealing with the physiography and meteorology of the State. This report has been most favorably reviewed in the scientific journals both of this and foreign countries, and there has been a large demand for the volume and its special parts from many sources, especially on the part of teachers.

The Maryland Weather Service has also been engaged in other lines of research preparatory to the publication of further reports. This work relates especially to the agricultural soils, the hydrography, the forestry, and the distribution of the life-zones in the State, and already considerable progress has been made in these directions.

WM. BULLOCK CLARK,
State Geologist and Director Weather Service.
ABSTRACT OF THE REPORT OF THE JOHNS HOPKINS PRESS.

The several serials have been continued through the year as follows:

The eighteenth series (582 pages, 80.) of the Studies in Historical and Political Science has been completed, and the nineteenth series is in progress. Among the issues have been papers on State Taxation, especially in the Southern States; The Church and Popular Education; The Struggle for Religious Freedom in Virginia; America in the Pacific and the Far East; State Activities in Relation to Labor. A translation of the important work on the American Workman, by Professor Levasseur, of Paris, has been issued as an extra volume of these Studies. The translation was made by Dr. Thomas S. Adams, and the volume was edited by Mr. Theodore Marburg. In connection with these Studies has just been published the second volume of the series of lectures on Diplomatic History, maintained by Dr. Albert Shaw. This volume is by Dr. J. M. Callahan, on the Diplomatic History of the Southern Confederacy, and it contains 304 pages, 12mo.

Of the American Journal of Mathematics, the twenty-second volume has been completed, and the twenty-third is now in progress. With the current volume, the editorship of the Journal was assumed by Professor Frank Morley, with the cooperation of Professor Newcomb, Dr. Cohen, and others. Portraits of Professor Salmon and Professor Mittag-Leffler have been issued during the year. This journal appears quarterly, and contains about 400 pages in each annual volume.

Of the American Journal of Mathematics, the twenty-second volume has been completed, and the twenty-third is now in progress. With the current volume, the editorship of the Journal was assumed by Professor Frank Morley, with the cooperation of Professor Newcomb, Dr. Cohen, and others. Portraits of Professor Salmon and Professor Mittag-Leffler have been issued during the year. This journal appears quarterly, and contains about 400 pages in each annual volume.

Of the American Chemical Journal, volumes twenty-four and twenty-five have been completed, and volume twenty-six is now in progress. This journal appears monthly, and is issued in two volumes, of six numbers and about 500 pages each annually.

Of the American Journal of Philology, volume twenty-one has been completed, and the first number of volume twenty-two has appeared. This journal appears quarterly.

Of the American Chemical Journal, volumes twenty-four and twenty-five have been completed, and volume twenty-six is now in progress. This journal appears monthly, and is issued in two volumes, of six numbers and about 500 pages each annually.

Of the Journal of Experimental Medicine, the last number of volume five is now in press and is expected to appear during the current month.

Of the Memoirs of the Biological Laboratory, part six of volume four, completing the volume and containing Dr. Bigelow's paper on Cassiopea Xamachana, has appeared.

Of the Modern Language Notes, volume fifteen has been completed, and volume sixteen is in progress.
Of the Contributions to Assyriology, part three of volume four, containing 144 pages, 8vo., has appeared.

Numbers 143 to 153 of the University Circulars have been issued since the last Report.

The Twenty-fifth Annual Report of the President was issued in January, 1901, and the Annual Register of the University and the Special Announcement of the Medical School in the Spring.

Of the Hebrew text of the Polychrome Bible, edited by Professor Haupt, two parts (Numbers, and Ezra and Nehemiah) have appeared during the year.

The reproduction of the unique manuscript of the Kashmirian Atharva Veda has been in progress under the direction of Professor Bloomfield. The work is now completed, and will be sent out to subscribers during the autumn.

Of the Journal of Terrestrial Magnetism and Atmospheric Electricity, volume five has been completed, and the sixth volume is now in progress.

Of the Johns Hopkins Hospital Reports, appearing irregularly, volume ten is now in progress. Of the Bulletin of the Johns Hopkins Hospital, appearing monthly, volume twelve is now in course of issue.

The exhibit prepared for the educational section of the Paris Exposition was at the close of that Exposition taken to the Technical Exposition at Manchester, Eng. It was there repacked and sent to Buffalo, at the request of the authorities of the Pan-American Exposition, where it is now installed.

There have been received, in accordance with the regulations, 150 copies of the dissertations accepted for the degree of Doctor of Philosophy from the graduates named below:

Bird, R. M.—The Action of Ammonia and Alcohol and Alcoholates on the Chlorides of Orthosulphobenzoic Acid.
Caldwell, B. P.—On the State of Equilibrium of certain Double Iodides, Cyanides, Nitrates and Sulphates in Aqueous Solution.
Crenshaw, J. B.—The Present Participle in Old High German and Middle High German.
Grave, C.—Ophiura Brevispina.
Griffin, L. E.—The Anatomy of Nautilus Pompilius.
Harris, L. M.—Studies in the Anglo-Saxon Versions of the Gospels.
Herrick, J. C.—The Influence of Changes in the Temperature upon Nervous Conductivity as Studied by the Galvanometric Method.
Hoeing, C.—The Codex Dunelmensis of Terence.
Horn, D. W.—A Study of the Action of Carbon Dioxide on the Borates of Barium and of the action of Acid Borates on the Carbonates of Barium at High Temperatures.
Huff, W. B.—The Spectra of Mercury.
Kent, W. A.—Notes on the Zeeman Effect.
Long, O. F.—On the Usage of Quotiens and Quotienscunque in Different Periods of Latin.
Lewis, A. F.—History of Higher Education in Kentucky.
Mendenhall, C. E.—The Radiation of a Black Body.
Myers, W. L.—The Maryland Constitution of 1864.
O'Harra, C. C.—The Geology of Allegany County, Maryland.
Reese, H. M.—An Investigation of the Zeeman Effect.
Sayre, H. A.—The Generation of Surfaces.
Smith, E. A.—The History of the Confederate Treasury.

The system of exchanges has been conducted as in previous years.

1901, September 1.

N. Murray.
The number of bound volumes in the Library is 101,997 (including 3600 from the gift of the library of Professor Adams); the accessions during the year have amounted to 7627.

The number of pamphlets and unbound volumes received during the year exceeded 5000. The total number of pamphlets in the Library is estimated at 100,000.

Over 1500 serials are regularly received by the Library.

The principal gifts of the year have been as follows:—

Professor Herbert B. Adams, anticipating the provisions of his will, gave to the University his large private library comprising about 3600 bound volumes and an extensive collection of pamphlets. These pertain chiefly to history and education and subjects allied thereto. A number of framed pictures are also included. This is among the more important gifts made to the Library from the beginning. It increases greatly the resources at the command of our students of history and education. During the past session, Professor Adams continued to add to the noteworthy collection of Southern literature given by him in previous years.

Mr. William Keyser, of Baltimore, gave the sum of $1,000 for the purchase of books for the geological department, with especial reference to works bearing upon economic geology. With this sum, the following sets of periodicals have been secured: Archiv für Bergbau, 20 vols.; Archiv für Mineralogie, 26 vols.; Verhandlungen des naturhistorischen Vereins der preussischen Rheinlande, 42 vols.; Jahrbuch für Berg- und Huttenwesen, 29 vols.; Revue universelle des Mines, 86 vols. In addition, a number of books relating to mining, metallurgy, clay-working, and practical geology have been acquired; other volumes have been purchased and will soon be received.

His Imperial Majesty, the German Emperor, has given a set of the works of Frederick the Great, in thirty-four large quarto volumes, sumptuously printed and bound. This is the remarkable edition edited by the Berlin Academy under the guidance of the well-known historian Preuss, and issued from the presses of the Imprimerie Royale in Berlin, between 1846 and 1857.

Mr. Theodore Marburg gave $200 to be applied to the purchase of books for the physical department. With this amount, certain sets of periodicals have been filled out, a number of valuable recent treatises and some
volumes of much importance in the early history of the physical sciences have been acquired.

An anonymous donor has, on behalf of the library, subscribed to the International Catalogue of Scientific Literature, to be issued under the auspices of the Royal Society of London. This involves an outlay of $85 a year for five years.

Mr. Leopold Strouse has added to the Strouse Rabbinical Library books to the value of over $200. In addition, he has presented eight volumes of Hebrew manuscripts dating from the sixteenth and seventeenth centuries, together with a considerable number of fragments of Oriental manuscripts from the Geniza at Cairo.

Professor Cleveland Abbe has continued his generous gifts to the Abbe Meteorological Library.

Other gifts worthy of note have been:

From the Egypt Exploration Fund (through the Baltimore branch of the Archeological Institute of America), sixteen examples of the Greek papyri fragments recently found at Oxyrhyncus and the Fayum towns in Egypt.

From the Chilean Government, a large number of volumes, including a set relating to the documentary history of Chile.

From Mr. Dosal, Mexican Consul in Baltimore, a set of five folio volumes, giving in detail a history of Mexico from the earliest times.

From Mr. W. W. Spence, the Thistle Edition of the works of Robert Louis Stevenson in 24 volumes; a set of the "Messages and Papers of the Presidents" in 10 volumes; and the "Universal Anthology," edited by Dr. Garnett of the British Museum, to be published in 33 volumes.

From President Gilman, a very large number of volumes relating to a variety of subjects.

From Dr. Welch, a complete set of the Zeitschrift für wissenschaftliche Mikroskopie, in 18 bound volumes.

From Dr. Kelly, Du Cange's Medieval Latin Lexicon in 6 quarto volumes, a sacred book from Siam written upon palm-leaf sheets in the Bali language, and other works.

From Professor Remsen, a number of volumes relating to Chemistry.

From the Misses Gilman, of Flushing, Long Island, a set of the first thirty volumes, bound, of the New Englander (from the library of the late Rev. Dr. E. W. Gilman).

From Mrs. Louise Craig, manuscript letters to Professor Thomas Craig from distinguished mathematicians here and abroad.

From a lady of Baltimore, Dante's Commedia (Venice 1544) and other early-printed books.

From the Duc de Loubat, two additional reproductions in color of ancient Mexican manuscripts.

From the Pathological Society of London, a partial set of their Transactions, in 34 volumes.
Report of the Librarian.

From the Royal College of Surgeons of England, two volumes published in commemoration of its centenary.

From the Department of State in Washington, the Proceedings of the Hague Peace Conference and a number of other notable volumes.

Many other important gifts have been made and will be enumerated in the full list of donations to be appended to the President’s Annual Report.

The usual installments of academic exchanges have been received.

Purchases have been generally limited to the books called for, as essential to the work of the current year, by the professors in the various departments. A number of volumes relating to the languages and ethnology of the Philippine Islands have been purchased, with a view to the courses planned by Professor Haupt in those subjects; further orders have gone forward to Manila for other important works. The Trustees authorized the purchase of the more valuable mathematical books from the library of the late Professor Craig. Acting on this authority, 150 volumes, selected by Professor Morley, have been received. A considerable number of volumes have been added to the medical collection. These have been selected in conference with Professor Mall, the chairman of the Medical School Library Committee. Among the purchases was a complete set of Ziegler’s Beiträge.

Ten oak tablets, in commemoration of some of the more noteworthy donations to the Library since the founding of the University, have been placed in the general reading room. These commemorate the gifts of Messrs. Abbe, Gail, Holt, Schmeisser, Slater, Strouse, German citizens (Bluntschli), Baltimore physicians (medical libraries), Governments, Institutions, and the gifts from certain private libraries.

The general library has been in charge of Mr. Brandow with two assistants.

The classical library has been in charge of Dr. C. W. E. Miller, under the supervision of Professor Gildersleeve.

The modern language collection has been in charge of Dr. Keidel and a library attendant, under the supervision of Professor Wood.

The historical collection has been in charge of Miss Daran, under the direction of Professor Adams and Dr. Vincent.

The chemical library has been in charge of Dr. Gilpin, under the direction of Professor Remsen.

The biological library has been under the direction of Professor Brooks and Dr. Andrews, with a library attendant.

The geological library has been in charge of Dr. Mathews, under the supervision of Professor Clark.

The astronomical library has been in charge of Dr. Cohen.

The physical and mathematical seminary collection has been under the supervision of Professor Ames.

The library of the Medical School has been under the supervision of Professor Howell, with an attendant in charge, and with the cooperation
of Miss Blogg, who is in charge of the Hospital collection and of the university books there deposited.

During the year, the New Book Department has purchased 3000 volumes of the estimated value of $6,000. Since the opening of the department, over 103,000 volumes of the estimated value of $163,000 have been exhibited on its shelves.

N. Murray,
Librarian.

1901, September 1.
GIFTS TO THE LIBRARY.

Aberdeen, University of. Roll of Alumni in Arts of the University and King's College of Aberdeen, 1596-1860. Aberdeen, 1900. Q.

Adams, Herbert B. (See pp. 25, 109 of this Report.)


Aitken, R. G. (Author.) Second List of New Double Stars. 1900. Q.

Aix, University of. Forty-two academic publications.

Allen, W. S. (Author.) Street Railways in Massachusetts. Q.


Lamé, G. Coordonnées curvilignes. Paris, 1859. O.


Tait, P. G. Quaternions. 2d edition. Cambridge, 1873. O.

Halphen, O. H. Fonctions elliptiques, première partie. Paris, 1886. O.


And eight other volumes.


Angström, K. (Author.) Intensité de la radiation solaire. Upsala, 1900. Q.

— Bedeutung des Wasserdampfes und der Kohlensäure. Leipzig, 1900. O.

Armour Institute of Technology (Chicago). Publications of the year.


Balch, T. W. (Author.) Éléments Crucifix. Phila., 1900. O.


Basel, University of. Seventy-three academic publications.

Bellows, J. (Author.) Survivals of Roman Architecture in Britain. 1888. O.


Berlin, University of. One hundred and sixty-six academic publications.

Bernice Pauahi Bishop Museum (Honolulu). Publications for the year.

Bodleian Library. Anecdota Oxoniensia, medieval and modern series, pt. 2.

Oxford prize essays for the year.

Bonn, University of. Seventy-two academic publications.

Bordeaux, University of. One hundred and twenty-six academic publications.


Bowers, C. A. (Author.) The Money-Question from a Celestial Point of View. Champaign, 1901. D.

Oxford prize essays for the year.

Bonn, University of. Seventy-two academic publications.

Bordeaux, University of. One hundred and twenty-six academic publications.


Bowers, C. A. (Author.) The Money-Question from a Celestial Point of View. Champaign, 1901. D.

Oxford prize essays for the year.
Gifts to the Library.

BRIOSCHI, FRANCESCO (Comitato per le Onoranze da). Brioschi, F. Opere Matematiche, tomo primo. Milano, 1901. Q.


BYRN MAWR COLLEGE. Two academic publications.


CANDIDE, A. Works on sculpture and modeling. London, 1849. 2 vols. Q.

BURNETT, C. H. Abella, E. Descripcion Fisica, Geologica, y Minera en Rosquejo de la Isla de Panay. Manila, 1890. Q.

CAEN, UNIVERSITY OF. Twenty academic publications.

CALIFORNIA GENEALOGICAL SOCIETY. Eldridge, Z. S. The Spanish Archives of California. San Francisco, 1901. O.

CALIFORNIA, UNIVERSITY OF. Four academic publications.

CAMBRIDGE ANTIQUARIAN SOCIETY. The Charters of the Borough of Cambridge, edited by F. W. Maitland and M. Bateson. Cambridge (Eng.), 1901. O.

CAMBRIDGE (ENG.) UNIVERSITY OF. Report of the Library Syndicate, 1900. Cambridge, 1901. Q.

CAMBRIDGE (MASS.) CITY CLERK. Annual Documents. 1900. O.

Records of the Town of Cambridge, 1630-1763.


CANADA, DEPARTMENT OF AGRICULTURE. Report on Canadian Archives by Douglas Brymner, Archivist. Ottawa, 1900-1901. O.

CERIKE, DR. L. A. (Author.) Memoria del Hospital de Dementes de Cuba, 1900. Habana. [1901]. Q.

CHARLESTON (S. C.), MAYOR OF (HON. J. ADAMS SMITH). Year Book for 1900.


CHICAGO, UNIVERSITY OF. Publications of the Yerkes Observatory. Chicago, 1900. O.

CHILE, GOVERNMENT OF. Fifty volumes relating to the history of Chile.

CHURCH, J. E., JR. (Author.) Beiträge zur Sprache der lateinischen Grabinschriften, erster Theil. München, 1901. O.

CLARK, C. C. P. (Author.) The "Machine" Abolished and and the People Restored to Power. New York, 1900. D.

CLARK, MRS. S. W. In Memoriam—Jonas Gilman Clark, 1815-1900. Q.

COHEN, S. S. Four of his recent publications.

COILLES, J. V. (Author.) An Elementary Exposition of Grassmann's Ausdehnungslehre, or Theory of Extension. Springfield (Mo.), 1901. O.

COLUMBIA UNIVERSITY. Academic publications for the year.

COLUMBIA UNIVERSITY. Academic publications for the year.

COPENHAGEN, UNIVERSITY OF. Twenty-eighth academic publications.

CORNELL UNIVERSITY LIBRARY. Twenty-one academic publications.


COUNCILL, W. H. (Author.) Negro Development in the South. 1901. O.

CRAGIN, F. W. (Author.) A Study of some Teleosts from the Russell Subetage of the Plate Cretaceous Series. Colorado Springs, 1901. O.

CRAIG, MRS. L. Manuscript Letters to Professor Thomas Craig from Distinguished Mathematicians in different parts of the world.

DAVENPORT CONTEMPORARY CLUB. Contemporary Club papers, 1897-98 and 1898-99.

DAVENPORT, 1897-99. O.

DOSAI, J. V. (CONSUL OF MEXICO). Mexico a Través de los Siglos, public. bajo la direccion del general D. Vicente Riva Palacio. Mexico, 1887-89. 6 vols. F.
Gifts to the Library. 115

DOTTERM, H. S. (Editor.) Historical Notes relating to the Pennsylvania Reformed Church. Vol. 1. Phila., 1900. Q.

ERLANGEN, UNIVERSITY OF. Two hundred and thirty-two academic publications.

FIELD COLUMBIA MUSEUM. Publications for the year. Chicago, 1900. O.


FREIBURG, UNIVERSITY OF. One hundred and twenty-one academic publications.

FREIST, C. (Author.) A Group of Old Authors. Phila., 1899. D.

GARCON, J. (Author.) La Bibliographie Industrielle. Paris, 1901. O.

GAROFALO, PROF. F. F. (Author.) La vie Romane in Sicilia. Napoli, 1901. O.


GARRISON, F. Mitchell, S. W. and Bellchett, E. T. Researches upon the Venoms of Poisonous Serpents. Washington, 1886. Q.

GATES, W. E. (Compiler.) The Maya and Frazil Calendars. Cleveland, 1900. Q.

GIARDIELI, DR. P. (Author.) Studio sulle Elegie di Massimiano. Savona, 1899. O.

GISKEN, UNIVERSITY OF. Fifty-one academic publications.

GILDERSLEEVE, B. L. Nine volumes relating to classical literature.

GILMAN, D. C. A large number of miscellaneous volumes.

GILMAN, MRS. Tollemache, L. A. Talks with Mr. Gladstone. New York, 1898. D.


GÖTTINGEN, UNIVERSITY OF. Ninety-two academic publications.

GRAZ, UNIVERSITY OF. Two academic publications.

GREEN, J. (Author.) Causes of the War in South Africa. Worcester, 1900. O.

GREEN, S. A. Twenty-four miscellaneous publications.

GREEN, S. S. Six miscellaneous publications.

GREENWICH ROYAL OBSERVATORY. Magnetic and Meteorological Results, 1898. Edinburgh, 1900. F.

GRISFORD, UNIVERSITY OF. One hundred and twelve academic publications.

GRIENBERG, UNIVERSITY OF. Sixteen academic publications.

HALE, CHARLES E. (BISHOP). Report of the Committee appointed by the Philomathean Society of the University of Pennsylvania to translate the Inscription on the Rosetta Stone. O.

HALE, UNIVERSITY OF. Ninety-four academic publications.

HARRISON, CARTER H. (MAYOR OF CHICAGO). Mayor's Annual Message, 1899. Chicago, 1900. O.

HART, J. M. Rückert, H. Geschichte der Neuhochdeutschen Schriftsprache. 2 vols. Leipzig, 1875. O.

SCHNEE, W. The Old-Irish Glosses at Würzburg and Carlsruhe. Pt. 1. Hertford, 1887. O.


Wattenbach, W. Deutschlands Geschichtsquellen im Mittelalter. 2 vols. Berlin, 1877-78. O.

Two other publications.

HART, T. N. (MAYOR OF BOSTON). (Author.) Address to the City Council. Boston, 1901. O.

HARVARD COLLEGE, ASTRONOMICAL OBSERVATORY. Publications for the year.

HAWAII, SECRETARY OF THE TERRITORY. Eight official Reports. Honolulu, 1900-1901. O.

HEIDELBERG, UNIVERSITY OF. One hundred and twenty-one academic publications.

HEMMER, J. C. (Author.) Diseases of the Stomach, 2nd ed. Phila., 1900. O.
Gifts to the Library.

HOLMES, C. R. (Author.) Hypertrophy of the Turbinated Bodies, etc. O.
HOLT, H. & Co. Their publications for the year.
HUCKLE, OLIVER. (Author.) The Larger Life. Baltimore, 1900. O.
IOWA GEOLOGICAL SURVEY. Annual Report for 1900. Des Moines, 1901. Q.
IRELAND, ROYAL ACADEMY OF MEDICINE. Transactions. Vol. 18. Dublin, 1900. O.
ITALY, MINISTER OF COMMERCE. Annuario Statistico Italiano, 1900. Roma, 1900. Q.
ITALY, E. UFFICIO GEOLOGICO. Memorie descrittive della carta geologica d'Italia. V. 10. Roma, 1900. Q.
JAMAICA, INSTITUTE OP. Jamaica in 1901. Kingston, 1901. O.
JAMESON, J. F. (Author.) The Functions of State and Local Historical Societies. Washington, 1898. O.
JOHNSON, D. S. (Author.) Notes on the Flora of the Banks and Sounds at Beaufort, N. C. Chicago, 1900. O.
JUDSON, A. B. Eighteen of his medical publications.
DICKENS, C. Bleak House, first edition with original wrappers. London, 1853. O.
Sacred Book from Siwan written upon palm-leaf sheets in the Ball language.
KESTNER, WILLIAM. (See pp. 25, 199 of this Report.)
KIEL, UNIVERSITY OP. Two hundred and thirty-five academic publications.
KÖNIGSBERG, UNIVERSITY OP. Fifty-two academic publications.
LANGLEY, S. P. (Author.) Sur les derniers résultats obtenus dans l'étude de la partie infra-rouge du spectre solaire. 1900. Q.
The New Spectrum. New Haven, 1901. Q.
LAVAL UNIVERSITY. L'Église Orthodoxe Russe, deux conférences par C. Laflamme. 1900-1901. Quebec, 1901. O.
LEIPZIG, UNIVERSITY OP. Two hundred and seven academic publications.
LEIPZIG STANFORD JUNIOR UNIVERSITY. Two academic publications.
LEYDEN, UNIVERSITY OP. Eleven academic publications.
LIEGE, UNIVERSITY OP. Eight academic publications.
LILLE, UNIVERSITY OP. Fifty-six academic publications.
LIVERPOOL BIOLOGICAL SOCIETY. Proceedings and transactions. V. 14. Liverpool, 1900. O.
LOHIOl, P. DE (Author.) Notes pour servir à l'étude des Échinodermes. Fascicule IX. Genève, 1901. Q.
LOUBAT, DUC DE. Tonalamatl der Azteken'schen Sammlung. Berlin, 1900. Q.
Seler, Auf alten Wegen in Mexico und Guatemala. Berlin, 1901. O.
LOUVAIN, UNIVERSITY OP. Twenty-one academic publications.
LUND, UNIVERSITY OP. Twenty-nine academic publications.
LYONS, UNIVERSITY OP. Two hundred and twenty academic publications.
McCLURE'S MAGAZINE (THROUGH MR. PHILLIPS). Stevenson, R. L. Autograph Chapter from "The South Seas." F.
McCreaY, G. W. (Author.) Street Index to Baltimore. Baltimore, 1900. O.
Gifts to the Library. 117

MACKALL, T. B. Hodgson, J. The Cradle of the Confederacy. Mobile, 1876. O.
MANE, UNIVERSITY OF. Stevens, J. S. The Effect of Magnetization upon the Elasticity of Rods. Orono, 1900. Q.
MALL, F. P. Papers from the Anatomical Laboratory of the Johns Hopkins University. Vols. 2-5. Baltimore, 1897-1900. 4 vols. O.
MANILA, OBSERVATORY OF. Six of its publications.
MARBURG, T. (See p. 109 of this Report.)
MAYOR, J. E. B. (Author.) Franz Heinrich Reusch. Cambridge, 1901. S.
Thirlwall, C. The Centre of Unity. Cambridge, 1901. S.
MICHIGAN, UNIVERSITY OF. Eight academic publications.
MONACO, S. A. S. Le PRINCE ALBERT 1er DE. Résultats des Campagnes Scientifiques. Fascicles 13-16. Monaco, 1899-1900. F.

Two Maps of the Azores.
Richard J. Les Campagnes Scientifiques de S. A. S. le Prince Albert 1er de Monaco. Monaco, 1900. O.
MONTPELLIER, UNIVERSITY OF. One hundred and sixteen academic publications.
Mosso, Prop. U. (Author.) Température du corps dans le jeûne. Turin, 1900. O.
MOTT, F. W. (Author.) Four recent medical works.
MÜNZBE, UNIVERSITY OF. Fourteen academic publications.
MUNICH, UNIVERSITY OF. Ninety-three academic publications.
MOSS-ARNOLT, W. Catalogue of Theological and Semitic Literature. Chicago, 1901. O.
NANCY, UNIVERSITY OF. Seventy-five academic publications.
NEWFOUNDLAND, GOVERNMENT OF. Newfoundland in 1900. New York, 1900. D.
NEW HAMPSHIRE HISTORICAL SOCIETY. Bingham, H. The Influence of Religion upon Human Progress. Concord, 1900. O.
NEW JERSEY GEOLOGICAL SURVEY. Annual Report for 1900. Trenton, 1901. O.
NEW SOUTH WALES GEOLOGICAL SURVEY. Jaquet, J. B. The Iron Ore Deposits of New South Wales. Sydney, 1901. Q.
NEWTON, A. (Author.) On the Zoology of Ancient Europe. London, 1862. O.
Gibert White of Selborne, 1720-1793. 1899. O.
NEW YORK HISTORICAL SOCIETY. Vincent, M. E. The Old and the New Century. New York, 1900. O.
Hoffman, E. Memorial of the Hon. John Alsop King. New York, 1901. O.
Collections of the Society for 1892. New York, 1893. O.
NEW YORK PUBLIC LIBRARY. A Handbook of the S. P. Avery Collection of Prints and Art Books in the Library. 1901. O.
NEW YORK STATE LIBRARY. Official State Documents, 1899-1900. O. and Q.
University Reports and Bulletins.
NIKENDZU, F. (Author.) De Generè Brysonima. Braunsberg, 1901. Q.
NOBLE, G. H. (Author.) Four of his late publications. Phila., 1900. Q.
NOVA SCOTIA LEGISLATIVE ASSEMBLY. Nova Scotia Archives, 2. Halifax, 1900. O.

OWENS COLLEGE (COUNCIL OF). Hickson, S. J. The Alycyanaria and Hydrocorallina of the Cape of Good Hope. Capetown, 1900. O.
Pratt, E. M. Anatomy of Neohelia Porcellana. 1900. Q.
The Owens College, Manchester; a brief History of the College. Edited by P. J. Hartog. Manchester, 1900. F.
Gifts to the Library.

PALTIES, V. H. (Author.) The 42-Line Bible of Gutenberg. 1901. O.

PARIS EXPOSITION (UNITED STATES COMMISSION.) Twelve official publications.

PARIS, UNIVERSITY OF. Six hundred and fifty-eight academic publications.

PARMA, REALA BIBLIOTECA. Topografia della Reale Biblioteca di Parma. Parma, 1894. Q.


PENNSYLVANIA—GERMAN SOCIETY. Proceedings. Vol. 10. 1900. Q.

PENNSYLVANIA STATE LIBRARY. Four official publications. Harrisburg, 1897-98.

PENNSYLVANIA, UNIVERSITY OF. Nineteen academic publications.

PLANJ, J. F. (Author.) Topografia medica de Soluna y Distritos Adjacentes. Barcelona, 1901. O.

PORTO RICO, DIRECTOR OF CENSUS. Report for 1899. 1900. O.

PORTUGAL, MINISTERE DE LA MARINE ET D'OUTREMER. Album de estatistica graphica dos caminhos de ferro portugueses das provincias ultramarinas. Lisbon, 1898. F.


PRINCE, J. D. (Author.) Notes on the Modern Missi-Delaware Dialect. O.

The Modern Dialect of the Canadian Abenakis. Toronto, 1901. Q.

PRINCETON UNIVERSITY. The Elegies of Maximianus. Princeton, 1900. O.


RANDOLPH-MACON COLLEGE. The John P. Branch Historical Papers of Randolph-Macon College, No. 1. Richmond, 1901. O.

REMSIN, I. A. Eleven volumes of chemical publications.

RENNES, UNIVERSITY OF. Twenty academic publications.

REUTER, O. (Author.) The Difficulties of Obtaining Justice. [Denver, 1900.] O.

RIO DE JANEIRO, OBSERVATORY. Annuario para el Anno de 1901.


ROGERS, HOWARD J. Monographs on Education in the United States. New York, 1900. 2 vol. Q.

ROSNGARTEN, J. G. (Author.) Franklin's Bagatelles. Phila., 1901. F.


MacCormac, Sir W. Address of Welcome at the Centenary Festival, July 26, 1900. London, 1900. O.

SAPPORO, AGRICULTURAL COLLEGE LIBRARY. L'Institut Agronomique de Sapporo, Japan. 1900. O.


SEWARD, G. F. Three of his recent publications.

SHAKESPEARE SOCIETY OF PHILADELPHIA. Ashhurst, B. L. Some Remarks on Mr. W. H. Edwards' "Shaksper not Shakespeare." Phila., 1901. O.

SINGH, I. A Historic Jewish Banquet in the City of New York, May 21, 1901. New York, 1901. O.

SLACK, H. R. (Author.) Hydrophobia: its prevalence and prevention. 1901. O.

Smith, J. DONNELL. (Author.) Undescribed Plants from Guatemala and other Central American Republics. 22. Chicago, 1901. Q.

Primitifs des Costariciens par H. Pittier, vol. 2, publié avec la collaboration de J. D. Smith and others. San José de Costa Rica, 1898-1900. O.

SMITH, W. G. (Author.) George Allen, LL.D. An address. 1900. O.

Gifts to the Library.


Catherwood, F. Views of Ancient Monuments in Central America, Chiapas and Yucatan, 25 Plates in Portfolio. F.


STEWART, C. L. (Author.) Grammatische Darstellung der Sprache des St. Pauler Glossats zu Lukas. Berlin, 1901. O.

STRASBURG, UNIVERSITY OF. Fifty-four academic publications.

STRUCH, LEOPOLD. (See p. 110 of this Report.)

STUDY, E. (Author.) Geometrie der Dynamen. Leipzig, 1901. O.

SWAN, C. H., JR. (Author.) Monetary Problems and Reforms. New York, 1897. D.

TASHKENT ASTRONOMICAL AND PHYSICAL OBSERVATORY. Publications, Nos. 1 and 2 (premiere partie) and Atlas. Tashkent, 1899-1900. 3 vols. Q and F.


TIERNAN, C. B. The Tiernan and Other Families. Baltimore, 1901. O.

TOKYU, PROF. R. (Author.) Skogarbetarnes sôda i nordvestra delen af Angermanland. Stockholm, 1900. O.

Eine Methode, um den Kohlensauregehalt in kleiner Blutmengen zu bestimmen. 1900. Q.

Niers und Kreislauf. Moscow, 1900. O.

And four other recent publications.

TOKYO, IMPERIAL EARTHQUAKE INVESTIGATION COMMITTEE. Publications, Nos. 1-2 and 5-6. Tokyo, 1897-1901. Q.


TORONTO, UNIVERSITY OF. Ten academic publications.

TOULOUSE, UNIVERSITY OF. Ninety-nine academic publications.

TRINITY COLLEGE (DUBLIN) OBSERVATORY OF. Astronomical Observations and Researches. Dublin, 1900. F.

TUBINGEN, UNIVERSITY OF. Sixty-eight academic publications.

TUNELL, G. G. (Author.) Railway Mail Service. Chicago, 1901. O.

TURIN, ASTRONOMICAL OBSERVATORY. Publications for the year.

UTRECHT, UNIVERSITY OF. Seventeen academic publications.

VAN MARKS, J. C. (Author.) Industrial Social Organization.

VIELLES, L. Four of his recent publications.

VERMONT, UNIVERSITY OF. Brainard, E., Jones, L. R., and Eggleston, W. W. Flora of Vermont, Fern and Seed Plants growing without Cultivation. Burlington, 1900.

VIATT, A. Le veto Legislatif dans la Constitution des Etats-Unis (1787) et dans la Constitution française de 1791. Paris, 1901. Q.

VICTORIA UNIVERSITY (ENGLAND). Eight medical theses. Manchester, 1900-01. O.

VIENNA, UNIVERSITY OF. Five academic publications.

VINCIN, J. M. (Author.) Switzerland at the beginning of the sixteenth century. D.

VIRGINIA, UNIVERSITY OF. Six academic Publications.


WALES, F. J. Nine volumes and pamphlets on the subject of meteorology. 1832-1900.

WARNER, W. R. AND SWABAY, A. Astronomical Instruments. Cleveland, 1900. Q.

Gifts to the Library.

WEBER, W. L. Selections from the Southern Poets. New York, 1901. T.


WELSH, H. (Author.) The Other Man's Country. Phila., 1900. D.


WILDE, H. Correspondence on the Invention of the Dynamo-Electric Machine, etc. Manchester, 1900. Q.


WILSON, J. K. (Author.) Death; the Meaning and Result. Lily Dale, 1901. D.

WISCONSIN STATE TREASURER. Biennial Report, Madison, 1900. O.

WÜRSBURG, UNIV. of. One hundred and nine academic publications. YALE UNIVERSITY. Four academic publications.

Reports and other current publications have been received from the societies and institutions named below. This does not include catalogues, etc., received in regular exchange.

American Association for the Advancement of Science; American Board of Commissioners for Foreign Missions; American Bible Society; American Humane Association; American Museum of Natural History; American Irish Historical Society; American National Red Cross Relief Committee; American Orthopedic Association; American Pediatric Society; American Physicians and Surgeons, Congress of; American Congregational Association; American Society of Heating and Ventilating Engineers; Association of American Anatomists; Atlanta Board of Education; Baltimore Chamber of Commerce; Baltimore Department of Public Improvements; Baltimore Health Department; Baltimore Law School; Board of Children's Guardians of Marion Co., Indiana; Boston City Auditor; Boston Department of Municipal Statistics; Boston Museum of Fine Arts; Boston Public Library; Boston Registry Department; Boston School Committee; Boston Society of Natural History; Buffalo Public Library; Bureau of American Ethnology; California Bureau of Labor Statistics; Cambridge (Mass.) Public Library; Carnegie Library of Atlanta; Central Conference of American Rabbis; Chicago Civil Service Commission; Chicago Board of Education; Cincinnati Chamber of Commerce; Cincinnati Museum Association; Civil Service Reform Association; Cleveland Public Library; Columbia University; Columbus Public School Library; Connecticut Bureau of Labor Statistics; Cooper Union; Dartmouth College; District of Columbia Health Department; Drew Theological Seminary; Enoch Pratt Free Library; Forbes Library; Friends' Free Library (Germanstown); Harvard University; Harvard University Law School; Haverhill Public Library; Hawaii Board of Health; Hebrew Technical Institute; Illinois Bureau of Labor Statistics; Indiana State Medical Society; Indian Rights Association; Japan, Imperial Library; Jersey City Free Public Library; Jewish Training School of Chicago; John Crerar Library (Chicago); Los Angeles Public Library; McGill University; Maryland Bureau of Industrial Statistics; Massachusetts Agricultural College; Massachusetts Board of Education; Massachusetts Board of Gas and Electric Light Commissioners; Massachusetts Bureau of Statistics of Labor; Massachusetts, Commissioner of Public Records; Massachusetts State Board of Charity; Massachusetts State Board of Health; Massachusetts State Board of Insanity; Metropolitan Museum of Art (New York); Metropolitan Water Board (Boston); Michigan Bureau of Labor Statistics; Michigan Schoolmasters' Club; Milwaukee Public Museum; Milwaukee City Service Commission; Missouri Geological Survey; Missouri Botanical Garden; Newark Free Public Library; Nebraska Bureau of Labor; Newberry Library; New Bedford Public Library; New England Society in New York; New Hampshire State Library; New Jersey Bureau of Statistics of Labor; New Jersey Training School; Newton Free Library; New York Charter Revision Committee; New York City Board of Education;
Gifts to the Library.

New York City Charity Organization Society; New York City, General Society of Mechanics and Tradesmen; New York City Young Men's Christian Association; New York Civil Service Reform Association; New York Juvenile Asylum; New York Mercantile Library; New York State Charities Aid Association; New York State Commission in Lunacy; New York State Department of Labor; North Carolina Agricultural Experiment Station; Oberlin College; Ohio Chief Inspector of Mines; Ohio State University; Ohio Board of State Charities; Ontario Department of Agriculture; Ontario Bureau of Industries; Ottawa Literary and Scientific Society; Peabody Institute; Perkins Institution; Philadelphia Bureau of Charities; Philadelphia Free Library; Philadelphia Library Company; Philadelphia Mercantile Library; Princeton Theological Seminary; Providence Public Library; Polytechnic Institute of Brooklyn; Portland (Oregon) Library Association; Pratt Institute Free Library; Providence Athenæum; Robert College; Radcliffe College (Cambridge, Mass.); Rochester Theological Seminary; Royal College of Physicians of London; Rutgers College; Saint Bartholomew's Hospital; St. Louis Mercantile Library Association; Salem Public Library; San Francisco Board of Supervisors; South Dakota School of Mines; Springfield State Hospital; Storrs Agricultural Experiment Station; Thomas Crane Public Library; Trinity College (Durham, N. C.); Tufts College; Union Club (N. Y.); University Club (N. Y.); Williams College Library; Wisconsin Natural History Society; Wisconsin State Historical Society.

The University is indebted, as in previous years, for many and valuable gifts from the several governmental departments at Washington.
REPORT OF THE DEAN OF THE JOHNS HOPKINS MEDICAL SCHOOL.

To the President:

I beg leave to submit the following report of the instruction in the Medical School during the session of 1900-1901.

The total number of students enrolled as candidates for the degree of M. D. was 209, as against 211 last year. It is interesting to note the wide area from which this body of students was drawn. They were all college graduates and represented the alumni of sixty-four different institutions, including most of the leading colleges of the country, as shown in the tabular statement below:

Adelbert College, - - - - 1 Loyola College, - - - - - 1
Alabama, University of, - - - - 1 Leland Stanford Jr. Univ., - - - - 5
Amherst College, - - - - - - 7 Massachusetts Inst. of Tech., - - - - 1
Beloit College, - - - - 2 McGill University, - - - - - 1
Bowdoin College, - - - - - - 5 Michigan, University of, - - - - 4
Brooklyn Polytechnic Institute, - - - - 1 Minnesota, University of, - - - - 2
Bryn Mawr College, - - - - 4 Montana, University of, - - - - - 1
California, University of, - - - - 5 Nashville, University of, - - - - - 1
Central College (Mo.), - - - - 1 New York University, - - - - - 2
Chicago, University of, - - - - 3 North Carolina, University of, - - - - 3
Cincinnati, University of, - - - - 1 North Dakota, University of, - - - - 1
Columbian University, - - - - - - 2 Oberlin College, - - - - - 1
Cornell University, - - - - 4 Ohio Wesleyan University, - - - - - 1
Furman University, - - - - - - 1 Pennsylvania College, - - - - - 2
Florida Classical and Lit. Coll., - - - - 1 Princeton University, - - - - - 9
Georgia, University of, - - - - 3 Randolph-Macon College, - - - - - 5
Hampden-Sidney College, - - - - 2 Roanoke College, - - - - - 1
Harvard University, - - - - - - 10 Rock Hill College, - - - - - 1
Illinois, University of, - - - - 2 Rutgers College, - - - - - 2
Indiana University, - - - - 2 Smith College, - - - - - 2
Johns Hopkins University, - - - - 34 St. John's College, - - - - - 1
Kansas State University, - - - - 1 Toronto University, - - - - - 1
Kentucky State College, - - - - - - 3 Union College, - - - - - 2
Knox College, - - - - - - 4 Vanderbilt University, - - - - - 1
Lafayette College, - - - - - - 2 Virginia Polytechnic Institute, - - - - - 1

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At the Commencement in June, fifty-three students of the fourth year class were graduated. Of this number the twelve whose record was the best for the entire four years were eligible for appointment as House-Officers in the Johns Hopkins Hospital. Owing, however, to the fact that some of this group had already won and accepted appointments in other hospitals, it was necessary to select the appointees to the Johns Hopkins Hospital from the first twenty members of the class. The list that was finally nominated by the Medical Faculty was as follows:

C. H. Bunting,  
L. M. Warfield,  
J. M. Ilizarot,  
T. R. Boggs,  
M. J. Rubel,  
S. H. Watts,  
H. A. Fowler,  
J. H. Hathaway,  
F. H. Baetjer,  
J. M. Berry,  
C. N. Spratt,  
J. M. Siemons

The following members of the graduating class accepted positions elsewhere:

A. M. Atherton, Charity Hospital, Blackwell's Island, N. Y.  
W. H. Blakeslee, Assistant Examining Physician, Penna. R. R.  
C. H. Bunting, Surgeon, U. S. A.  
H. W. Carey, Bender Hygienic Laboratory, Albany Med. School, N. Y.  
R. Connor, Manhattan Eye and Ear Hospital, New York.  
G. S. Drake, Union Protestant Infirmary, Baltimore.  
L. V. Hamman, New York Hospital, New York.  
G. R. Holden, Roosevelt Hospital, New York.  
W. B. Johnson, Bacteriologist, Johns Hopkins Hospital.  
H. M. Kaufman, Jewish Hospital, Philadelphia, Pa.  
D. M. Lewis, City Hospital, Boston, Mass.  
W. T. Longcope, University Hospital, Philadelphia, Pa.  
W. H. Maddren, King's County Hospital, Brooklyn, N. Y.  
E. S. Moore, New England Hospital, Boston, Mass.  
H. P. Parker, Western Reserve University, Cleveland, O.
The instruction in the various classes followed the schedules heretofore announced, except that in the third year several changes of importance were made. To render the work of this year more practical and better adapted to the individual instruction of the fourth year, two special surgical clinics were provided and the course in Medical and Surgical Anatomy was much enlarged.

I am glad to be able to report that the excellent spirit of the School continues. The interest and enthusiasm of the student-body were all that could be desired, and questions of discipline gave as little concern as in graduate instruction. The energy and productiveness of the School, among the instructors as well as the students and graduates, are well illustrated by the character and number of the publications compiled for the last annual announcement.

During the past year the Trustees of the University voted to use the Baxley Fund to endow the Professorship of Pathology. The details of this bequest are given in the annual announcement. The matter is referred to here mainly to emphasize the fact that the Baxley Professorship of Pathology thus instituted is the first endowed chair in the University, and I take the liberty of expressing the hope that other friends of the Medical School may see fit to strengthen its resources in a similar way.

Another gift that has been greatly appreciated was the offer of a fellowship of the value of $800, by the Baltimore Association for the Promotion of the University Education of Woman, on the condition that the holder should be a woman and should be nominated by the Medical Faculty. This offer was accepted, and Dr. Florence R. Sabin, a graduate of the Class of 1900, was nominated by the Faculty and subsequently appointed by the Board of Trustees.

I desire also to express the thanks of the School to several friends who have kindly presented pictures for use in the library. I may add that this room needs further attention of this kind to make it more attractive and comfortable than it is at present. It seems very desirable that the important material contained in this library, representing, as it does, the spirit of research and progress in the medical sciences, should be made as profitable as possible to the medical students. In this connection it may be well to call attention to the fact that an endowment for the maintenance of this library is greatly needed.

In the matter of student-life it is a pleasure to report that some steps have been taken to provide an opportunity for healthful exercise for the students. By means of a small appropriation made by the Trustees and
afterwards supplemented by a fund raised by the students among themselves, the tennis grounds have been put in good condition for use, and shower-baths have been provided in the basement of the physiological building. It would seem desirable to arrange also for some gymnastic apparatus for use during the part of the year when out-door exercise is impracticable.

The buildings of the Medical School were used during the Christmas holidays by a number of the societies composing the Society of American Naturalists. The new laboratories made it possible to give these societies ample facilities for meetings and demonstrations, so that the occasion was pleasant and successful in all respects.

The instruction to Graduates in Medicine has been unusually successful during the past year. The total enrollment for this year was 101. Of this number 70 attended the systematic courses offered during the months of April, May and June, the remainder taking courses at other times during the year and for varying periods. The fees for the spring courses to graduates were increased, in most cases doubled, but in spite of this fact the attendance was as large as in the year preceding. This result may be attributed to the fact that an effort was made to improve the character of the courses offered and to provide a number of accessory attractions in the way of general lectures and demonstrations, which were kindly given by members of the staff of the Medical School and the Hospital and by Dr. S. A. Knopf, of New York.

W. H. Howell,
Dean.
A HISTORY OF THE ADAM T. BRUCE FELLOWSHIP.

1887-1901.

Prepared under the direction of Professor W. K. Brooks.

The Adam T. Bruce Fellowship was founded in 1887 by a gift of ten thousand dollars, received from Mrs. Adam T. Bruce, of New York, as a memorial of her son, Adam T. Bruce, Ph. D., a Graduate Student, a Fellow, and an Instructor in this University from 1883 to 1887. As an illustration of the gratifying results that have come from this encouragement of meritorious students, the following statement has been prepared.

Past Bruce Fellows are requested to send to the Registrar of the University the data which are needed to make and keep this history complete.

ELECTORS.

The President of the University, the Professor of Animal Physiology, and the Professor of Animal Morphology.

The Non-Resident Electors named below:—1891, Professor H. F. Osborn, of Princeton College. 1892, Professor C. Otis Whitman, of Clark University. 1893, Professor Henry V. Wilson, of the University of North Carolina. 1894, Professor Thomas H. Morgan, of Bryn Mawr College. 1895-1899 and 1901, Professor Maynard M. Metcalf, of the Woman's College of Baltimore. 1900, Dr. D. S. Johnson, of the Johns Hopkins University.

HOLDERS OF THE FELLOWSHIP.

1888-89.

Henry Van Peters Wilson, A. B., Johns Hopkins University, 1883, University Scholar, 1885-87, Fellow, 1887-88, Ph. D., 1888, Bruce Fellow, 1888-89; U. S. Fish Commission, 1889-91; Professor in the University of North Carolina, 1891—.

PUBLICATIONS AS BRUCE FELLOW.

On the Presence of a Mouth and Anus in Actinaria. (Univ. Circ., 1889.)
On a new Actinia, Hoplophoria corralligens. (Studies Biol. Lab., IV, 6, 1890.)
Breeding Times of Bahama Animals. (Univ. Circ., 1889.)

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The Bruce Fellowship.

Later Publications.

On the Development of the Sea Bass. (Univ. Circ., 1890.)
The Embryology of the Sea Bass (— Serranus Atratus). (Bull. U. S. Fish Com., IX, 1891.)

Notes on the Development of some Sponges. (Journ. Morphol., V, 1891.)


A Description of some of the Muscles of the Cat. (By H. V. Wilson and G. H. Kirby.)
(Journ. Elisha Mitchell Soc., Part II, 1895.)

Notes on the Natural History of the Wilmington District. (Science, Vol. VI, No. 135, 1897.)
The Lateral Sensory Anlage in the Salmon. (By H. V. Wilson and J. E. Mattocks.)
(Anatomischer Anzeiger, Bd. XIII, No. 24, 1897.)

1889-90.

Shozaburo Watase, S.B., Sapporo Agricultural College, 1884; University Scholar, Johns Hopkins University, 1887-88; Fellow, 1888-89; Bruce Fellow, 1889-90; Ph. D., 1890; Lecturer and Assistant in Clark University, 1890-92; Reader in Cellular Biology, University of Chicago, 1892-94, and Assistant Professor, 1894-99; Professor in the University of Tokyo, 1899-.

Publications as Bruce Fellow.

On the Morphology of the Compound Eyes of Arthropods. (Studies Biol. Lab., IV, 1890.)

Karyokinesis and the Cleavage of the Ovum. (Univ. Circ., Vol. IX, 1890.)

On the Migration of the Retinal Area, and its Relation to the Morphology of the Simple Ocelli and the Compound Eyes of Arthropods. (Univ. Circ., Vol. IX, 1890.)

Later Publications.

Studies on Cephalopods, I. Cleavage of the Ovum. (Journ. Morphol., Vol. IV, 1891.)
On the Phenomena of Sex Differentiation. (Journ. Morphol., Vol. VI, 1892.)

Homology of the Centrosome. (Journ. Morphol., Vol. VIII, 1893.)
On the Nature of Cell Organization. (Wood's Holt Biological Lectures, 1893.)
Origin of the Centrosome. (Wood's Holt Biological Lectures, 1894.)


1890-91.

Thomas Hunt Morgan, S.B., Kentucky State College, 1886; University Scholar, Johns Hopkins University, 1888-89; Fellow, 1889-90; Ph. D., 1890; Bruce Fellow, 1890-91; Editor, Department of Embryology, Amer. Nat., 1891; Associate Professor of Biology, Bryn Mawr College, 1891-95, and Professor, 1896-.

Publications as Bruce Fellow.

A Preliminary Note on the Embryology of the Pycnogonida. (Univ. Circ., Vol. IX, No. 89, April, 1890.)
The Bruce Fellowship.

The Origin of the Test Cells of Ascidians. (Journ. Morphol., Vol. IV, 1890.)

LATER PUBLICATIONS.

Experimental Studies on Teleost Eggs. (Anat. Anz., Vol. VIII, 1893.)
The Development of Balanoglossus. (Journ. Morphol., Vol. IX, 1894.)
The Formation of the Fish Embryo. (Journ. Morphol., Vol. X, 1895.)
A Study of a Variation in Cleavage. (Ib.)
Studies of the "Partial" Larvae of Sphaerechinus. (Ib.)
Experimental Studies of the Blastula and Gastrula-Stages of Echinus. (Ib.)
The Fertilization of non-nucleated Fragments of Echinoderm Eggs. (Ib.)
The Development of the Frog's Egg. (New York, 1897.)
On the Amphibian Blastopore. (Studies Biol. Lab., Vol. IV, No. 6, 1898.)
Notes on the Fate of the Amphibian Blastopore. (Univ. Circ., Vol. VIII, No. 70, March, 1899.)
Developmental Mechanics. (Science, Vol. VII, 1899.)
Impressions of the Naples Zoological Station. (Science, Vol. III, No. 83.)
Regeneration in the Hydromedusa; Gonionemus vertens. (Amer. Nat., Vol. XXXIII, No. 36, 1899.)
A Confirmation of Spallanzani's Discovery of an Earthworm Regenerating a Tail in place of a Head. (Anat. Anz., Vol. XV, No. 21, 1899.)
Some Problems of Regeneration. (Wood's Holt Biological Lectures, 1897-98-99.)
The Effects of Strychnine on the Unfertilized Eggs of the Sea-Urchin. (Science, February, 1900.)
Some Notes on the Breeding Habits and Embryology of Frogs. (Amer. Nat., August, 1891.)
A New Larval Form from Jamaica. (Ib., December, 1891.)
Development of Mammals. A Review. (Ib., February, 1891.)
The Bruce Fellowship.

An Organism produced sexually without characteristics of the Mother. A Translation. (Jb., March, 1893.)
Regeneration and Liability to Injury. (Science, August 16, 1901.)

1891-93.

ROBERT PAYNE BIGELOW, S.B., Harvard University, 1887; University Scholar, Johns Hopkins University, 1889-90, Fellow, 1890-91, Bruce Fellow, 1891-93, Ph. D., 1892; Editor-in-chief of the American Naturalist, 1897-98; Instructor in Biology, Massachusetts Institute of Technology, 1893--; and Librarian, 1893--.

PUBLICATIONS AS BRUCE FELLOW.

On a New Species of Cassiopea from Jamaica. (Zool. Anz., 1891.)
On Reproduction by Budding In the Discomedusae. (Univ. Circ.,) Vol. XI, 1892.)
The Stomatopoda of Bimini. (Univ. Circ., Vol. XII, 1892.)
Some Observations on Polycoenia Frondosa. (Univ. Circ., Vol. XII, 1893.)
Preliminary Notes on the Stomatopoda of the Albatross collections and other Specimens in the National Museum. (Univ. Circ., Vol. XII, 1893.)
A Jelly-fish from the Great Salt Pond. (Journal of the Jamaica Institute, Vol. I, 1893.)
The Anatomy and Development of Cassiopea Xamachana. (Memoirs Biol. Soc. Nat. Hist., Vol. 6, No. 6, 1900.)

1893.

MAYNARD MAYO METCALF, A. B., Oberlin College, 1889; University Scholar, Johns Hopkins University, 1891-92, Fellow, 1892-93, Bruce Fellow and Ph. D., 1893; Associate Professor and Professor of Biology, Woman's College of Baltimore, 1893--.

PUBLICATIONS AS BRUCE FELLOW.
The Eyes and Subneural Gland of Salpa. Part IV of a Memoir on the Genus Salpa by W. K. Brooks. (Selected Morphological Monographs, II, Johns Hopkins University, Baltimore, 1893.)
Notes upon an apparently new Species of Octacnemus, a deep-sea, Salpa-like Tunicate. (Univ. Circ., Vol. XII, 1893.)
Contributions to the Embryology of Chiton. (Studies Biol. Lab., Vol. V, 1893.)
Notes on Tunicate Morphology. In five parts. (Anat. Anz., Bd. XI, Nos. 9 and 11, 1893.)
An Answer to a Suggestion by Delage and Hirouard that the Accessory Eyes in Salpidae may be Oocysts. (Anat. Anz., Bd. XVI, No. 12, 1899.)
1894.

ROSS GRANVILLE HARRISON, A. B., Johns Hopkins University, 1889, University Scholar, 1890-91, Fellow, 1893-94, Ph. D., 1894, Bruce Fellow, 1894; M. D., University of Bonn, 1899; Lecturer in Morphology, Bryn Mawr College, 1894-95; Instructor in Anatomy, J. H. U., 1896-97, and Associate, 1897-99; Associate Professor, 1899-.

PUBLICATIONS AS BRUCE FELLOW.
The Development of the Fins of Teleosts. (Univ. Circ., Vol. XIII, 1894.)
The Metamerism of the Dorsal and the Ventral Longitudinal Muscles of the Teleosts. (Ib.)

LATER PUBLICATIONS.
Ectodermal or Mesodermal Origin of the Bones of Teleosts? (Anat. Anz., Bd. X, Nos. 3 and 4, 1894.)
Die Entwicklung der unpaaren und paarigen Flossen der Teleostier. (Arch. f. Mik. Anat., Bd. XLVI, 1895.)
The Growth and Regeneration of the Tail of the Frog Larva. Studied with the Aid of Born's Method of Graffling. (Arch. f. Entwicklungs-mechanik der Organismen, VII Band, 1898.)

1894-95.

SEITARO GOTO, M. S., Imperial University, Tokyo, 1890, and S. D., 1895; Bruce Fellow, 1894-95; Professor of Biology, First High School, Tokyo, 1899-.

PUBLICATIONS AS BRUCE FELLOW.
On the Protoplasmic Connection of Lasso-cells in Physalia. (Univ. Circ., Vol. XIV, 1895.)
Observations on the Development of the Gonophores in Physalia. (Ib.)

LATER PUBLICATIONS.
On some Ectoparasitic Trematodes from the Atlantic Coasts of the United States. (Compte Rendu des stances du troisième Congrès Internationale de Zoologie, 1896.)
The Bruce Fellowship.

1895-96.

Henry McElderry Knower, A.B., Johns Hopkins University, 1890, University Scholar, 1893-94, Fellow, 1894-95, Bruce Fellow, 1895-96, Ph. D., 1896; Instructor in Biology, Williams College, 1896-97; Fellow by Courtesy, Johns Hopkins University, 1897-99, and Instructor in Anatomy, 1899-.

PUBLICATIONS AS BRUCE FELLOW.


The Embryology of a Termite. (Eutermes Rippertii) (1). (Jour. of Morph., Vol. XVI, 1900.)

1895-97.

George Lefevre, A.B., Johns Hopkins University, 1891, University Scholar, 1892-93, Fellow, 1894-95, Bruce Fellow, 1895-97, Ph. D., 1896, Assistant in Zoology, 1897-98; Master of Science, Boys' High School, Atlanta, Georgia, 1898-99; Professor of Zoology, University of Missouri, 1899-.

PUBLICATIONS AS BRUCE FELLOW.


Budding in Perophora: An Abstract by W. K. Brooks and George Lefevre. (Univ. Circ., No. 126, 1896.)


LATER PUBLICATIONS.


Franklin Story Conant. [A Sketch.] (Univ. Circ., No. 132, 1897.)

Budding in Perophora. (Jour. of Morph., Vol. XIV, 1898.)


The Advance of Zoology in the Nineteenth Century. (Trans. Acad. Sci., St. Louis, July 8, 1901.)

1897-98.

Franklin Story Conant, A.B., Williams College, 1893; Fellow, Johns Hopkins University, 1895-96, Fellow by Courtesy, 1896-97, Ph. D., 1897, Bruce Fellow, 1897.

LIST OF PUBLISHED BIOLOGICAL PAPERS.

Description of Two New Chaetognaths. (Univ. Circ., No. 119, June, 1895.)

Notes on the Chaetognatha. (Univ. Circ., No. 126, June, 1896.)

The Inhibitory and Accelerator Nerves to the Crab's Heart (an abstract), by F. S. Conant and H. L. Clark. (Univ. Circ., No. 126, June, 1896.)


Notes on the Cubomedusae (an abstract). (Univ. Circ., No. 132, November, 1897.)
The Bruce Fellowship.

The Cubomedusae. (*Memoirs from the Biological Laboratory of the Johns Hopkins University*, Vol. IV, No. 2, 1899.)

Note.—Immediately after his appointment as Bruce Fellow, in June, 1897, Dr. Conant went to Jamaica to continue his studies on the Cubomedusae, and spent nearly three months there in this work, but died, a few hours after his return, of illness contracted in Jamaica.

The specimens of Cubomedusae and of other animals which Dr. Conant preserved in Jamaica after they had been kept under various conditions of light and darkness, and his notes on the physiology of vision in the Cubomedusae, have been studied and revised by Dr. E. W. Berger. They have been published as The Cubomedusae, Part II, in *Memoirs from the Biological Laboratory of the Johns Hopkins University*, Vol. IV, No. 4, 1900.

1897-98.

DUNCAN STARR JOHNSON, S. B., Wesleyan University, 1892; Fellow, Johns Hopkins University, 1896-97, Ph. D., 1897, Bruce Fellow, 1897-98, Assistant and Associate in Botany, 1898-1901, Associate Professor of Botany, 1901–.

PUBLICATIONS AS BRUCE FELLOW.


The Development of Pilularia globulifera L. (*Univ. Circ.*, No. 137.)

*On the Development of the Leaf and Sporocarp in Marsilia quadrifolia, L.* (*Annals of Botany*, XII, XLVI, June, 1898.)

*On the Leaf and Sporocarp of Pilularia.* (*Bot. Gazette*, XXVI, 1, July, 1898.)

1898.

GILMAN ARTHUR DREW, S. B., University of Iowa, 1890; Fellow, Johns Hopkins University, 1897-1898, Ph. D., 1898, Bruce Fellow, 1898, Assistant in Zoology, 1898-1900; Professor of Biology, University of Maine, 1900–.

PUBLICATIONS AS BRUCE FELLOW.


Yoldia limatula. (*Memoirs from the Biological Laboratory of the Johns Hopkins University*, Vol. IV, No. 5, 1899.)


1899.

CASWELL GRAVE, S. B., Earlham College, 1895; Fellow, Johns Hopkins University, 1898-99, Ph. D., 1899, Bruce Fellow, 1899, 1900-01; Assistant Biologist of the U. S. Fish Commission, 1899; Assistant Biologist N. C. Oyster Investigation, 1900; Assistant in Zoology, J. H. U., 1901–.

PUBLICATIONS AS BRUCE FELLOW.

Embryology of Ophiocoma echinata, Agassiz. (*Univ. Circ.*, No. 137.)

Notes on the Ophiurids collected in Jamaica during June and July, 1897. (*Univ. Circ.*, No. 137.)
The Bruce Fellowship.

Psychical Qualities of Ants and Bees (an abstract). (American Naturalist, June, 1898.)
Ophiura brevispina, Say. (Memoirs Nat. Acad. Sc., 1900.)

1900.

Lawrence Edmonds Griffin, A. B. and Ph. B., Hamline University, 1895; University Scholar, University of Minnesota, 1895–1896; Fellow, Johns Hopkins University, 1899-1900, Ph. D., 1900, Bruce Fellow, 1900; Instructor in Biology, College for Women of Western Reserve University, 1900–.

Publications as Bruce Fellow.
The Arterial Circulation of Nautilus pompilius. (Univ. Circ., No. 145, 1900.)
The Anatomy of Nautilus pompilius. (Memoirs of the National Academy of Sciences, Vol. VIII, No. 5, 1901.)
THE MARBURG COLLECTION OF CYPRIOTE ANTIQUITIES.

The following description of this noteworthy collection, presented to the University by Theodore Marburg, Esq., has been prepared by Dr. Christopher Johnston, and is reprinted from the Journal of the American Oriental Society, Volume XXII, 1901.

Through the liberality of Mr. Theodore Marburg, of Baltimore, the Johns Hopkins University has recently come into possession of the valuable and interesting collection of Cypriote antiquities acquired by Mr. Marburg from Col. Falkland Warren, C.M.G., who filled the office of Chief Secretary to the Government of Cyprus from 1879 to 1891. Col. Warren, whose papers on Cyprian coins are well known to numismatists, during his long residence in Cyprus devoted much attention to the study of archaeology and was an ardent collector of archaeological objects. For this his official position gave him exceptional advantages.

The objects comprising the collection which, through the generous gift of Mr. Marburg, is now the property of the Johns Hopkins University, were in part found by Col. Warren himself in the course of excavations carried on under his supervision, in part purchased by him from the peasants who found them. The objects purchased, as he states in a letter to Mr. Marburg, were specially selected from a large number brought to him at various times. The collection, which numbers 122 separate pieces, contains 49 ornaments of gold, 13 seal-cylinders, 20 engraved gems and seals, and 40 scarabs and other small objects. Babylonian, Phoenician, Egyptian, and Greek art are all represented by characteristic examples, and the period of time covered would seem to be about 800 to 150 B.C. Earrings seemed to have possessed a special attraction for the ladies of ancient Cyprus, and the very large number of these ornaments found has been remarked by all writers on Cyprian archaeology.

Of the 49 gold ornaments in the Marburg collection no less than 42 are earrings or parts of earrings. The most usual pattern is the circle terminating in the head of a lion, a lynx, an ibex, or a bull, the eyes of the animal being usually represented by tiny gems set in the gold socket. The workmanship is remarkably fine. Some earrings consist of a simple crescentic ring without ornamental addition; many, of all designs, have pendants attached; and a few have jeweled settings. A particularly attrac-
The Marburg Collection.

A catalogue of the objects in this collection, prepared by Colonel Warren, is here printed.

GOLD ORNAMENTS.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Date (B.C.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greek, 1</td>
<td>Gold ring, ancient setting, cement core</td>
<td>400</td>
</tr>
<tr>
<td>Greek, 2</td>
<td>Gold ring, ancient head of youthful Hercules or Apollo, Nikosia district</td>
<td>120</td>
</tr>
<tr>
<td>Tyrian, 3</td>
<td>Pair of earrings, lynx heads, set with stones, exceptionally large</td>
<td>350 to 400</td>
</tr>
<tr>
<td>Phoenician, 4</td>
<td>Pair of earrings, large, circular, plain</td>
<td>350 to 400</td>
</tr>
<tr>
<td>Phoenician, 5</td>
<td>Pair of earrings, long, grape pendants</td>
<td>350 to 400</td>
</tr>
<tr>
<td>Tyrian, 6</td>
<td>Pair of earrings, bulls' heads</td>
<td>350 to 400</td>
</tr>
<tr>
<td>Etruscan, 7</td>
<td>Ring, solid gold, amethyst, goat's head, very rare, ancient and beautiful gem, ancient setting</td>
<td>350 to 400</td>
</tr>
<tr>
<td>Greek, 8</td>
<td>Ring, Minerva cut on cornelian, in ancient setting, perfect in every way</td>
<td>350 to 400</td>
</tr>
<tr>
<td>Greek, 9</td>
<td>Ring, ancient setting, no stone</td>
<td>350 to 400</td>
</tr>
</tbody>
</table>
The Marburg Collection.

Etruscan, 10—Pair of earrings, solid gold, one drop missing, very fine work .......................................................... 350 to 400
Phoenician, 11, 12, 13—Three single earrings, plain gold, with chains and drops .................................................. 350 to 400
Tyrian, 14—Pair of earrings, bulls' heads ........................................ 350 to 400
Tyrian, 15—Pair of earrings, goats' heads ...................................... 350 to 400
Tyrian, 16—Pair of earrings, ibex heads, fine work .......................... 350 to 400
Tyrian, 17—Single earring, lion's head ........................................ 350 to 400
Tyrian, 18—Single earring, ibex head ........................................... 350 to 400
Tyrian, 19—Single earring, bull's head ........................................ 350 to 400
Tyrian, 20—Single earring, Eros ............................................. 350 to 400
Phoenician, 21—Single earring, long pendant ................................. 350 to 400
Phoenician, 22—Single earring, green stone and double pendant 350 to 400
Phoenician, 23—Single earring, heart-shaped pendant ........................ 350 to 400
Phoenician, 24—Pair of earrings, crescent shaped .......................... 350 to 400
Phoenician, 25—(a). Single earring, solid, wrapped around ............... 350 to 400
Phoenician, 25—(b). Single earring, fine, plain ............................ 350 to 400
Greek, 26—Child's ring, with Greek inscription ............................. 350 to 400
Greek, 27—Vase for pendant, exquisite work ................................ 350 to 400
Greek, 28—Lynx head, exquisite work ....................................... 350 to 400
Greek, 29—Child's ring, with Greek inscription ................................ 350 to 400
Greek, 30—Pair of gold earrings, green stone pendants ........................ 350 to 400
Roman, 31—Pair of gold earrings, cornelian stones .......................... 150 to 120
Greek, 32—Pair of gold earrings, with plain head.
Greco-Phoenician, 33—Gold figure for pendant. These rare pieces have usually an inscription on a roll inside. This one has not been opened ................................................................. 500
Greco-Phoenician, 34—Three bulls' heads, used as pendants for neck-
lace ......................................................................................... 500
Greco-Phoenician, 35—Brow band or hair band ................................ 500

Engraved Stones, Seals, and Gems.

1. Scarab—Black hematite, with ancient Cypriot inscription. No others with Cypriot inscriptions are known. The division between is remarkable. These two are believed to be unique of their kind; none are to be found in any of the national museums of Europe. They were examined and remarked on by Professor Sayce, of Cambridge.
2. Scarab—White quartz. See above.
3. Black Hematite—Hittite seal, with Cypriot lettering, lion attacking an ox. (See early coin of Abderra.) B. C. 800.
5. Hittite Seal—Antelope standing amid trees, above a scorpion, a leaf and a dot.
6. Hittite Seal—Bear and dog.
7. Scarabs and Seals (21)—Representing period of Egyptian Rule in Cyprus, which was conquered by Amasis, B. C. 500.
9. Yellow Stone—Female with infant on knee, sacred tree (Hom) in front—Egyptian influence.
11. Gnostic—Figure with cock’s head, snake legs, scourge in right hand, shield in left. I A W; reverse A B P A C A.
12. Gnostic—Harpocrates (God of Silence) seated on lotus, left hand pointing to mouth, right hand holding scourge. Sun—Moon—I A W—K. S.
15. Glass Cameos—These were brought to me in village of Nikosia by villagers who had found them when plowing. They are undoubtedly genuine. The style of head and head-dress shows an early type and would give to glass an earlier discovery than now accredited.
20. Twenty-one scarabs, seals, and cartouches, which carry the art of Egypt and Phoenicia one into the other and mix these with the so-called Hittite period of Mr. Flinders Petrie; also, see Cesnola’s work on Cyprus and Plato xxxiv to xli.

Gems.

Intaglio, Greek—Head of Alexander the Great, claimed to be a contemporaneous intaglio, probably by Pergotoles.


Intaglio by "Cromios"—Minerva killing the Titan who dared to make war against Jupiter, by turning upon him the shield on which was fixed the head of Medusa. The Titan is here shown as feeling himself being turned to stone. No finer or more exquisite piece of art is to be found in any museum.

All these gems were purchased by me in Cyprus.
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The Marburg Collection.

Cylinders from Cyprus.

None later than B.C. 800.

1. Inscription “To the god Bu-im Son of Heaven.” “Bigal Samas” (dedicated this).

2. Inscription “The servant of the goddess Nin-si-an-ne.” From Paphos district.

3, 4, 5, 6, 7. Cypriot-Assyrian. Found in Paphos district; some characters “incorrectly” formed; probably cut to represent ancient Cypriot dialect and to represent Cyprian names phonetically. The prefix “god” shows that some deity is alluded to. These cylinders are undoubtedly genuine. They were brought to me soon after being found.

8, 9, 10, 11, 12, 13. Found at one or other of the following places: Larnaca, Paraskevi, Kythrea, and are peculiar to the Island of Cyprus. See Cesnola’s work on Cyprus. They date not later than B.C. 800 to 1000.
PROFESSOR ROWLAND.

1848-1901.

AN ADDRESS

BEFORE THE OFFICERS AND STUDENTS OF THE JOHNS HOPKINS UNIVERSITY, ASSEMBLED BEFORE THE FUNERAL, APRIL 18, 1901.

BY DANIEL C. GILMAN,

President.

A great man has fallen in the ranks—great in talents, great in achievements, great in renown. Not now need we recall the incidents of his life, nor estimate the characteristics of his impressive personality, nor enumerate his contributions to physical science. We are assembled in this academic hall as his friends, his pupils, his colleagues, about to follow his deserted body to the church, and there in silence to give thanks for such an example, or to utter, with his kindred, words of faith and hope, consecrated by the comfort they have given to the mourners of many climes and of many centuries. Before these last rites, we pause to think what sort of a man was this whom we so love and honor, whom we so lament, whose death, in one aspect, seems so premature; in another, crowned with the best that earth can give.

Our friend was born with a powerful mind, and the older he grew the more powerful it appeared to those who knew him intimately and to those most capable of understanding the problems and the methods which engaged his thoughts. Others may have eyes as keen and fingers as facile, but his vision and his dexterity were controlled by a brain of extraordinary fineness, versatility, and strength. Nobody could walk with him, hunt with him, sail with him, talk with him, work with him, without perceiving his firm grasp, his clear aim, his concentrated energy, his extraordinary powers. In early youth his mind was directed to the study of nature—not so much to plants and animals as to physical and chemical forces. This was the bent of his life. It is true that he was fond of music, classical music especially—Chopin’s funeral march, for example,—and he loved good works of art—the Madonnas of Raphael, for example.

Yet he cared but little for literature, having showed, in his early days, a boyish animosity toward Greek and Latin which he never wholly overcame. Aristotle was no authority to him. But the mysterious forces of the physical world—gravitation, sound, light, heat, electricity and magnetism—were his constant study. The principles of mechanics were to him

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of fundamental importance, and mathematics was subservient to all his investigations. In this broad field he was a reader, a student, an experimenter, an inventor, a discoverer, a philosopher. He knew how to ask a difficult and far-reaching question, and he knew how to seek the answer.

Extraneous considerations were excluded when he saw the point of an inquiry, and on that point he concentrated all his powers. For example, when he began the brilliant series of experiments in spectrography, which made him peerless in this domain, he saw that the spectrum depended on the accuracy of the gratings, and the gratings on the dividing engine, and the dividing engine on the screw,—so he began the study of light by devising and making a screw, more exact than any screw that has ever been produced by the most accomplished makers of instruments of precision, and then he saw that photography must be improved before he could reveal to the eye of others the intricacy of the solar spectrum.

His intellectual apparatus was controlled by a powerful will. When he was determined upon a given course, no regard for consequences, no apprehension of perils or of difficulties, no dread of failure, proved a barrier. They heightened his zest. Fortunately his ends were noble and his proceedings wise, so that rarely, if ever, did failure disappoint him or weaken his self-confidence. He would have been a great soldier, a great explorer, a great lawyer.

But above his keen perceptions, his logic, his adaptation of means to ends, and his marvelous concentration, I must place another moral quality—one that appeals to every one of us, whether we understand his determination of the mechanical equivalent of heat, or the steps by which he arrived at the value of the ohm. This moral quality is the love of truth. Of course, he was true in all the ordinary relations of life, That is the beginning of truth, but not the end of it. He was also true in all his investigations, careful to eliminate errors, to avoid preconceptions, to shrink from hasty conclusions and inferences, to be critical of other investigations, to be accurate, exact, conscientious, to spare no pains, to shrink from no efforts, to conceal no difficulties, in order that the absolute facts might be established, so far as this can be done by limited humanity. To him science was another word for truth—not all the truth, but that amount of truth which the limited powers of man have discovered. He was a follower of Isaac Newton, picking up upon the seashore a few pebbles and discerning their lessons.

At the close of our first decennium, two speakers were brought forward to tell, respectively, what had been the aims of this University in providing for the study of science and letters. These speakers were Professor Gildersleeve and Professor Rowland. They had no preliminary conference, but each brought his discourse to a close by a return to the keynote—the keynote which had governed and should govern our personal behavior and the harmonies of our associated lives as members of the Johns Hopkins University.
Said the exponent of letters: "First and last, the scientific standard must be upheld for the university man, be he a student of letters, be he a physicist; and that standard is the absolute truth, the ultimate truth. 'Nothing imperfect is the measure of anything,' says the prince of idealists."

Said the man of science: "But for myself, I value in a scientific mind most of all that love of truth, that care in its pursuit, and that humility of mind which makes the possibility of error always present more than any other quality. This is the mind which has built up modern science to its present perfection, which has laid one stone upon the other with such care that it to-day offers to the world the most complete monument to human reason. This is the mind which is destined to govern the world in the future and to solve problems pertaining to politics and humanity as well as to inanimate nature.

"It is the only mind which appreciates the imperfections of the human reason and is thus careful to guard against them. It is the only mind that values the truth as it should be valued and ignores all personal feeling in its pursuit. And this is the mind the physical laboratory is built to cultivate."

These are words worthy to be recalled by the successive groups of students who come here for instruction and counsel as the years roll on. Let us sacredly cherish our inheritance.

In closing, let me call our departed brother, our dear colleague, our honored teacher, our ornament, our pride and our delight, by another nobler title. He was a servant of the Lord. If one who leads a life of purity, fidelity, and integrity, and who consecrates, without self-seeking, his strength, his talents, his time, at home and at his laboratory, in health and in bodily infirmities, in youth and in maturity, to the interpretation of the laws by which the cosmos is governed, is a Servant of the Lord,—then reverently and truly we may say of our departed friend he was a Servant of the Lord, Maker of Heaven and Earth. Let me apply to him words of the Master, whom he was taught from childhood to revere. His "eye was single" and "his whole body was full of light."
In Memoriam.

J. HALL PLEASANTS.

The following minute and resolution in memory of Mr. Pleasants were adopted by the Trustees, October 7, 1901:

Since the last meeting of this Board, Mr. J. Hall Pleasants, who was one of its most useful members, has died.

Elected on November 7, 1881, he served the University at all times ably and with scrupulous fidelity, until he was lately disabled by physical infirmity.

As a member of the Finance Committee and of the Building Committee, his wise counsels and zealous services were always at the command of his associates, and were especially profitable to the University.

An honorable merchant, a brave, independent, and public-spirited citizen, his death is a loss to the whole community; and to the members of this Board his departure brings the added sense of the personal loss of a faithful colleague and valued friend.

Resolved, That this minute be entered on the records of the Board, and that a copy be sent to the family of Mr. Pleasants.

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