

**The**

**Johns Hopkins University**

**Circulars**

**Baltimore, Maryland**

**Numbers 1 – 18**

**1879 – 1882**



## EXPLANATORY NOTE.

SINCE the opening of the JOHNS HOPKINS UNIVERSITY in 1876, it has been found convenient to issue frequent statements in respect to the development of its plans. The earliest of these Official Circulars were printed in octavo. Nearly two years ago the form was changed to a quarto, and some of the features of the University Reporter of Cambridge, England, were introduced, particularly current announcements of lectures and courses of instruction. These bulletins were originally designed for the information of those who were connected with this University, or who wished to enter it; but they soon proved to be a convenient channel for acquainting the public at large with the condition of the foundation, and for spreading information in respect to scientific and literary investigations which were here in progress. Gradually the reports of society meetings, and the synopses of scientific papers claimed more and more space, and a demand for the successive circulars was indicated far beyond the company for which the original publication had been designed; and even to a limited extent in foreign countries.

It is now thought best to modify in some particulars the plan of the circulars, so as to give still more space to the original work of the professors in the University and their more advanced students, without omitting the current information in respect to the plans of instruction, the rolls of attendance, and other purely local matters.

In order that a ready reference may be made to the articles of more permanent value which have already been printed, the accompanying index has been constructed by the skillful hand of one of the officers of the University, to whose assiduity and accuracy these pages bear abundant witness. I regret that his reluctance to be named precludes a more definite acknowledgment of his efficient services.

D. C. GILMAN.

Office of the PRESIDENT, Johns Hopkins University,  
*Baltimore, September, 1882.*

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JOHNS HOPKINS, a merchant of Baltimore, who died in 1873 in the seventy-ninth year of his age, bequeathed a large part of his fortune to two institutions which perpetuate his name—the Johns Hopkins Hospital, and the Johns Hopkins University. Each foundation received an endowment of not far from three and a half million dollars. The Hospital is now building. The University has just concluded its sixth year of work. The two institutions are separate corporations, but are closely affiliated.

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# JOHNS. HOPKINS UNIVERSITY CIRCULARS.

*Published with the approbation of the Board of Trustees.*

No. I.]

BALTIMORE, DECEMBER, 1879.

[PRICE 5 CENTS.]

## CALENDAR, 1879-80.

September 24.	Fourth Academic Year began.
September 24-27.	Examination of Candidates for Admission.
September 30.	Instructions Resumed.
October 28—December 19.	Mr. Lanier's Course in English Literature.
November 3—December 11.	Prof. Rabillon's Course in French Literature.
December 2-18.	Lectures on France and Spain in the United States, at the Peabody, by Rev. Dr. E. E. Hale.
December 23—January 5.	Christmas Recess.
January 6-15.	Lectures on Japanese Art, at the Peabody, by Prof. W. E. Griffis.
January 20—February 6.	Lectures on Ideality in the Physical Sciences, at the Peabody, by Prof. Benjamin Peirce.
January 20—February 6.	Prof. Trowbridge's Course on the Philosophy of Physics.
February 10-19.	Lectures on Vocal Culture, at the Peabody, by Prof. J. W. Churchill.
February 23—May 3.	Prof. Morris's Course on British Thought and Thinkers.
February 24-26.	Lectures on Celestial Chemistry, at the Peabody, by Prof. G. F. Barker.
March 2-4.	Lectures on Color Blindness, at the Peabody, by Dr. B. J. Jeffries.

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### MEETINGS OF SOCIETIES.

**Scientific.** First Wednesday of each month, at 8 P. M. Next meeting, January 7. S. F. Clarke, Sec'y.

**Philological.** First Friday of each month, at 12 M. Next meeting, January 9. C. R. Lanman, Sec'y.

**Historical and Political Science.** Third Friday of each month, at 8 P. M. Next

meeting, January 16. H. B. Adams, Sec'y.

**Metaphysical.** Second Tuesday of each month, at 8 P. M. Next meeting, January 13. Allan Marquand, Sec'y.

**Biological.** Thursday of each week at 4 P. M.

### PUBLIC LECTURES.

Lectures are now in progress, in Hopkins Hall at 5 P. M. :

Mr. Lanier, on *English Verse, especially Shakspeare's*, Tuesdays and Fridays.

Prof. Rabillon, on *French Epic Poetry, especially the Chanson de Roland*, Mondays and Thursdays.

## CHRONOLOGICAL STATEMENT.

- 1867, August 24. INCORPORATION OF THE JOHNS HOPKINS UNIVERSITY.  
 1870, June 13. ORGANIZATION OF THE BOARD OF TRUSTEES.  
 1873, December 24. DEATH OF THE FOUNDER; BORN MAY 19, 1794.  
 1874, February 6. FIRST BUSINESS MEETING OF TRUSTEES.  
 1874, December 30. ELECTION OF A PRESIDENT OF THE UNIVERSITY.  
 1876, February 22. PUBLIC ANNOUNCEMENT OF PLANS.  
 1876, September 13. OPENING OF THE UNIVERSITY.  
 1876, October 3. INSTRUCTIONS BEGAN.

By the action of the Trustees, May 7, 1877, it was determined that instructions should begin annually on the last Tuesday of September; that the organization of classes should commence one week earlier, and that instructions should close on the second Friday in June.

## OFFICERS AND STUDENTS, 1879--80.

## TRUSTEES.

PRESIDENT.	TREASURER.	SECRETARY.
GALLOWAY CHESTON.	FRANCIS WHITE.	WILLIAM HOPKINS.

GEORGE WILLIAM BROWN,  
89 W. Chase St.

WILLIAM HOPKINS,  
21 Franklin St.

GALLOWAY CHESTON,  
315 Madison Ave.

REVERDY JOHNSON,  
Mt. Vernon Hotel.

GEORGE W. DOBBIN,  
42 St. Paul St.

FRANCIS T. KING,  
76 Cathedral St.

JOHN W. GARRETT,  
50 Mt. Vernon Place.

C. MORTON STEWART,  
167 Dolphin St.

CHARLES J. M. GWINN,  
33 Mt. Vernon Place.

JAMES CAREY THOMAS,  
217 Madison Ave.

LEWIS N. HOPKINS,  
138 St. Paul St.

FRANCIS WHITE.  
237 St. Paul St.

## PRESIDENT OF THE UNIVERSITY.

GILMAN, DANIEL C. 81 Saratoga Street.  
 A. B., Yale College, 1852, and A. M., 1853; LL.D., Harvard University and St. John's College, 1876; Professor in Yale College, 1863-72; President University of California, 1872-75.

## PROFESSORS.

GILDERSLEEVE, BASIL L. 253 St. Paul St. *Greek.*  
 A. B., Princeton College, 1849, and A. M., 1852; Ph. D., University of Göttingen, 1853; LL.D., College of William and Mary, 1869; Professor of Greek in the University of Virginia, 1856-76; Professor of Latin in the University of Virginia, 1861-66.

MARTIN, H. NEWELL 233 St. Paul St. *Biology.*  
 M. B., University of London, 1871, and Dr. Sc., 1872; A. B., University of Cambridge, 1874, and A. M., 1877; Fellow, and late Lecturer on Natural History in Christ College, Cambridge; Fellow of University College, London.

MORRIS, CHARLES D. (Collegiate) 158 N. Howard St. *Latin and Greek.*  
 A. B., Lincoln College, Oxford, 1849, A. M., and Fellow of Oriel College, Oxford, 1852; Professor in the University of New York, 1875-76.

REMSEN, IRA 213 St. Paul St. *Chemistry.*  
 College of the City of New York; M. D., College of Physicians and Surgeons, N. Y., 1867; Ph. D., University of Göttingen, 1870; Professor of Chemistry in Williams College, 1872-76, and previously Assistant in Chemistry in the University of Tübingen.

ROWLAND, HENRY A. 14 Cathedral St. *Physics.*  
 C. E., Rensselaer Polytechnic Institute, Troy, 1870; Assistant Professor in the same, 1872-75.

SYLVESTER, J. J. 139 St. Paul St. *Mathematics.*  
 A. M., University of Cambridge; F. R. S., London and Edinburgh; Corresponding Member Institute of France; Member, Academy of Sciences in Berlin, Göttingen, Naples, Milan, St. Petersburg, etc.; LL.D., University of Dublin, University of Edinburgh; late Professor of Mathematics in the Royal Military Academy, Woolwich.

## LECTURERS FOR THE CURRENT YEAR.

PROFESSOR J. WILLARD GIBBS, of Yale College, *Theoretical Dynamics.*  
 MR. SIDNEY LANIER, of Baltimore, *English Literature.*  
 435 N. Calvert St.

PROFESSOR G. S. MORRIS, University of Michigan, *History of Philosophy.*  
 MR. CHARLES S. PEIRCE, of the U. S. Coast Survey, *Logic.*  
 187 N. Howard St.

PROFESSOR LEONCE RABILLON, of Baltimore, *French Literature.*  
 69 Park Ave.

PROFESSOR JOHN TROWBRIDGE, of Harvard University, *Physics.*

## ASSOCIATES.

ADAMS, HERBERT B. 123 W. Madison St. *History.*  
 A. B., Amherst College, 1872, and A. M., 1875; Ph. D., University of Heidelberg, 1876; Lecturer on History at Smith College.

BRANDT, HERMANN C. G. 228 N. Eutaw St. *German.*  
 A. B., Hamilton College, 1872, and A. M., 1875; Assistant Professor of Modern Languages in Hamilton College, 1874-76.

BROOKS, WILLIAM K. Lake Roland, Balt. Co. *Biology.*  
 A. B., Williams College, 1870; Ph. D., Harvard University, 1875.

BROWNE, WILLIAM HAND 2 Huntingdon Ave. *Librarian.*  
 M. D., University of Maryland, 1830.

COOK, ALBERT S. 123 W. Madison St. *English.*  
 S. B., Rutgers College, 1872, and S. M., 1875.

CROSS, JOHN M. St. Paul & Chase Sts. *New Testament Greek.*  
 A. B., Princeton College, 1867, and A. M., 1870; Tutor of Greek in Princeton College, 1873-76.

ELLIOTT, A. MARSHALL 214 N. Howard St. *Romance Languages.*  
 A. B., Haverford College, 1866, and A. M., 1878; A. B., Harvard University, 1868.

HASTINGS, CHARLES S. 8 Denmead St. *Physics.*  
 Ph. B., Yale College, 1870, and Ph. D., 1873; Holder of the "Tyndall Scholarship," in Paris, 1875.

LANMAN, CHARLES R. 132 W. Madison St. *Sanskrit.*  
 A. B., Yale College, 1871, and Ph. D., 1873.

MORSE, HARMON N. 12 Denmead St. *Chemistry.*  
 A. B., Amherst College, 1873; Ph. D., University of Göttingen, 1875; Instructor in Chemistry at Amherst College, 1875-76.

SCOTT, AUSTIN Washington, D. C. *History.*  
 A. B., Yale College, 1869; A. M., University of Michigan, 1870; Ph. D., University of Leipsic, 1873; late Instructor in History at the University of Michigan.

STORY, WILLIAM E. 41 Franklin St. *Mathematics.*  
 A. B., Harvard University, 1871; Ph. D., University of Leipsic, 1875; Tutor of Mathematics in Harvard University, 1875-76.

UHLER, PHILIP R. 218 W. Hoffman St. *Natural History.*  
 Librarian of the Peabody Institute, and President of the Maryland Academy of Sciences.

WARREN, MINTON 123 W. Madison St. *Latin.*  
 A. B., Tufts College, 1870; Ph. D., University of Strasburg, 1879.

## ASSISTANTS.

CLARKE, SAMUEL F. 267 N. Eutaw St. *Biological Laboratory.*  
 Ph. B., Yale College, 1878; Ph. D., Johns Hopkins University, 1879.

CRAIG, THOMAS United States Coast Survey. *Mathematics.*  
 C. E., Lafayette College, 1875; Ph. D., Johns Hopkins University, 1878.

FRANKLIN, FABIAN 228 W. Lanvale St. *Mathematics.*  
 Ph. B., Columbian University, 1869.

HALL, LYMAN B. 255 N. Eutaw St. *Chemical Laboratory.*  
 A. B., Amherst College, 1873; Ph. D., University of Göttingen, 1875.

SIHLER, CHRISTIAN 100 N. Paca St. *Biological Laboratory.*  
 Concordia College, 1866; M. D., University of Michigan, 1871.

## FELLOWS BY COURTESY.

## Former Holders of Fellowships.

ADAMS, HENRY C., (Lecturer at Cornell University) *Political Science.*  
 A. B., Iowa College, 1874, and A. M., 1877; Ph. D., Johns Hopkins University, 1878.

BLOOMFIELD, MAURICE (Student in Vienna, Austria) *Philology.*  
 A. M., Furman University, (S. C.), 1877; Ph. D., Johns Hopkins University, 1879.

JACQUES, WILLIAM W. 139 Carrollton Ave. *Physics.*  
 S. B., Massachusetts Institute of Technology, 1876; Ph. D., Johns Hopkins University, 1879.

SEWALL, HENRY (Student in Leipsic) *Biology.*  
 S. B., Wesleyan University, 1876; Ph. D., Johns Hopkins University, 1879.

## Fellow of Columbia College, N. Y.

FLETCHER, LAWRENCE B. 73 Courtland St. *Physics.*  
 A. B., Columbia College, 1877.

MISS CHRISTINE LADD, a graduate of Vassar College, whose mathematical attainments had been commended by the Faculty as worthy of the holder of a Fellowship in Mathematics, was invited by the Trustees, June 2, 1879, to continue her studies here for a year, and the usual stipend of a Fellowship was voted to her.

## FELLOWS.

ALLINSON, FRANCIS G.	123 W. Madison St.	<i>Greek.</i>
A. B., Haverford College, 1876; A. B., Harvard University, 1877.		
AYRES, BROWN	117 Bolton St.	<i>Physics.</i>
Washington and Lee University; S. B., Stevens Institute of Technology, 1878.		
BEVIER, LOUIS	140 Cathedral St.	<i>Greek.</i>
A. B., Rutgers College, 1878.		
BURNEY, WILLIAM	150 W. Biddle St.	<i>Chemistry.</i>
S. B., Davidson College, 1875; Ph. D., University of Heidelberg, 1879.		
FAHLBERG, CONSTANTINE	35 Courtland St.	<i>Chemistry.</i>
Ph. D., University of Leipzig, 1873.		
HALL, EDWIN H.	270 W. Fayette St.	<i>Physics.</i>
A. B., Bowdoin College, 1875.		
HARTWELL, EDWARD M.	132 W. Madison St.	<i>Biology.</i>
A. B., Amherst College, 1878, and A. M., 1876.		
IRBY, J. R. MCD.	244 N. Howard St.	<i>Mineralogy.</i>
S. B., University of Virginia, 1875; Ph. D., University of Göttingen, 1878.		
KUHARA, MITSURU	267 N. Eutaw St.	<i>Chemistry.</i>
S. B., University of Tokio, Japan, 1877.		
MARQUAND, ALLAN	St. James Hotel,	<i>Logic and Ethics.</i>
A. B., Princeton College, 1874.		
MITCHELL, OSCAR H.	140 Cathedral St.	<i>Mathematics.</i>
A. B., Marietta College, 1875, and A. M., 1878.		
NICHOLS, EDWARD L.	67 St. Paul St.	<i>Physics.</i>
S. B., Cornell University, 1875; Ph. D., University of Göttingen, 1879.		
NICOLASSEN, GEORGE F.	622 W. Lombard St.	<i>Greek.</i>
A. B., University of Virginia, 1879.		
PRATT, WALDO S.	132 W. Madison St.	<i>Philosophy.</i>
A. B., Williams College, 1878.		
PRENTISS, ROBERT W.	306 E. Chase St.	<i>Mathematics.</i>
S. B., Rutgers College, 1878.		
SEDGWICK, WILLIAM T.	267 N. Eutaw St.	<i>Biology.</i>
Ph. B., Yale College, 1877.		
STRINGHAM, WASHINGTON I.	107 N. Charles St.	<i>Mathematics.</i>
A. B., Harvard University, 1877.		
VAN VELZER, CHARLES A.	122 Myrtle Ave.	<i>Mathematics.</i>
S. B., Cornell University, 1876.		
WILSON, EDMUND B.	267 N. Eutaw St.	<i>Biology.</i>
Ph. B., Yale College, 1878.		
YOUNG, ABRAM V. E.	35 McCulloh St.	<i>Chemistry.</i>
Ph. B., University of Michigan, 1875.		

## STUDENTS.

ADKINS, WILLIAM H.	117 N. Charles St.	<i>Candidate.</i>
Easton (Md.) Classical School.		
ALEXANDER, WILLIAM J.	46 McCulloh St.	<i>Greek and German.</i>
A. B., University of London, 1876.		
ANDERSON, NEWTON M.	267 N. Eutaw St.	<i>Physics and Chemistry.</i>
Ohio State University; Massachusetts Institute of Technology.		
ARNOLD, JACOB D.	7 S. High St.	<i>Biology.</i>
A. B., Georgetown College, 1873, and A. M., 1876; M. D., Washington University, Balt., 1876.		
ARTHUR, WILLIAM H.	77 Franklin St.	<i>Biology.</i>
M. D., University of Maryland, 1877.		
ARTZ, C. WALTER	94 Saratoga St.	<i>Candidate.</i>
Mr. J. T. Carlile, Instructor.		
BADEN, WILLIAM W.	73 Preston St.	<i>Matriculate.</i>
Steuart Hall.		
BEADENKOPF, THOMAS M.	8 Ensor St.	<i>Matriculate.</i>
Baltimore City College, 1871.		
BERRY, T. ALEXIS	247 Bolton St.	<i>Candidate.</i>
Dr. Robert Atkinson's School.		
BISSING, GUSTAV	264 W. Lombard St.	<i>Special.</i>
Baltimore City College.		
BLAND, JOHN C.	Washington, D. C.	<i>Mathematics.</i>
C. E., Memb. Am. S. C. E.		

BOND, A. KERR	82 Read St.	<i>Matriculate.</i>
Mr. G. G. Carey's School, 1875.		
BOOKER, WILLIAM D.	152 W. Madison St.	<i>Biology.</i>
M. D., University of Virginia, 1867.		
BOTHNE, GISEL C. J.	282 E. Pratt St.	<i>Greek.</i>
A. B., Norwegian Luther College, Iowa, 1878; A. B., Northwestern University, Wisconsin, 1879.		
BOWDOIN, HENRY J.	130 N. Charles St.	<i>Matriculate.</i>
Mr. H. W. Luckett, Instructor.		
BRIGHT, JAMES W.	16 McCulloh St.	<i>Teutonic and Sanskrit.</i>
A. B., Lafayette College, 1877.		
BRINTON, DANIEL L.	45 Forrest Place.	<i>History and Languages.</i>
Mr. E. M. Lamb's School.		
BRISTOL, GEORGE P.	242 N. Eutaw St.	<i>Greek.</i>
A. B., Hamilton College, 1876.		
BROUN, PHILIP H.	118 St. Paul St.	<i>Chemistry.</i>
University of Virginia, 1876.		
BROWN, JOHN W.	Govanstown, Balt. Co.	<i>Matriculate.</i>
Mr. G. G. Carey's School.		
BRUERE, ABEL T.	85 McCulloh St.	<i>Preliminary Medical.</i>
Frechold (N. J.) Institute.		
CHEEK, SAMUEL R.	118 St. Paul St.	<i>Latin and English.</i>
A. B., Centre College, Kentucky, 1875.		
COALE, R. DORSEY	215 Madison Ave.	<i>Chemistry.</i>
C. E., Pennsylvania Military Academy, 1875.		
COLEMAN, ROBERT J.	Waverly, Balt. Co.	<i>Math. and Chemistry.</i>
A. B., Central College, Missouri, 1876.		
CONE, CHARLES M.	263 N. Howard St.	<i>Physics and Languages.</i>
S. B., Chandler Scientific Department, Dartmouth College, 1875.		
CONVERSE, J. HOLMES	Bar Library,	<i>Candidate.</i>
Racine College.		
CORE, JOHN, JR.	69 N. Gilmor St.	<i>History.</i>
Amherst College.		
COUNCILMAN, WILLIAM T.	Pikesville, Balt. Co.	<i>Biology.</i>
M. D., University of Maryland, 1878.		
CRISP, WILLIAM B.	Brooklyn, Md.	<i>History and Languages.</i>
Mr. F. Knapp's Institute.		
CUMMING, WILLIAM	313 N. Eden St.	<i>Candidate.</i>
Baltimore City College.		
DAY, DAVID T.	255 N. Eutaw St.	<i>Chemistry.</i>
City Grammar School.		
DAY, WILLIAM C.	255 N. Eutaw St.	<i>Matriculate.</i>
Baltimore City College.		
DONALDSON, FRANK	108 Park Ave.	<i>Biology.</i>
A. B., Harvard University, 1879.		
DOSH, F. BOWMAN	Arlington, Balt. Co.	<i>Matriculate.</i>
Milton Academy.		
DREY, SYLVAN	72 N. Carey St.	<i>Candidate.</i>
Mr. E. M. Lamb's School.		
EBELING, HERMANN L.	56 Courtland St.	<i>Candidate.</i>
Overlea College School.		
FAY, EDWARD A.	Washington, D. C.	<i>Romance Languages.</i>
A. B., University of Michigan, 1862, and A. M., 1865.		
FREEMAN, SPENCER H.	270 W. Fayette St.	<i>Physics and Mathematics.</i>
A. B., University of Rochester, 1875, and A. M., 1878.		
GANN'T, HENRY L.	Owings Mills, Balt. Co.	<i>Matriculate.</i>
McDonogh School.		
GARNER, SAMUEL	89 McCulloh St.	<i>Romance Languages.</i>
A. B., St. John's College, 1874.		
GAVIN, FRANK D.	Church Home Infirmary,	<i>Biology.</i>
M. D., University of Maryland, 1874.		
GEPIHART, GEORGE F.	253 W. Lombard St.	<i>History and Languages.</i>
Baltimore City College.		
GERKE, WALTER D.	56 Lexington St.	<i>French and German.</i>
Loyola College.		
GILMAN, BENJAMIN I.	70 Cathedral St.	<i>Philosophy.</i>
Williams College.		

GITTINGS, D. STERRETT	145 N. Charles St.	Candidate.	McILWAINE, CLEMENT R.	30 Denmead St.	History and Philosophy.
Mr. H. W. Luckett, Instructor.			A. B., Hampden Sidney College, 1878.		
GJELLUM, ERIK S.	282 E. Pratt St.	Greek.	MITSUKURI, KAKICHI	267 N. Eutaw St.	Biology.
A. B., Norwegian Luther College, Iowa, 1879.			Ph. B., Yale College, 1879.		
GLENN, JOHN M.	153 N. Charles St.	Greek.	MOALE, WILLIAM A.	152 N. Charles St.	Biology.
A. M., Washington and Lee University, 1879.			M. D., University of Maryland, 1879.		
GOODMAN, EDGAR	41½ Pennsylvania Ave.	Matriculate.	MOORE, WILLIAM S.	150 N. Eutaw St.	Math. and Physics.
Baltimore City College, 1875.			A. B., Davidson College, 1877.		
GRAMMER, CARL E.	425 Madison Ave.	Matriculate.	MORGAN, LEIGH C.	77 Mulberry St.	Matriculate.
Baltimore City College.			Baltimore City College, 1875.		
HARLAN, WILLIAM B.	199 N. Howard St.	Candidate.	MURRAY, DANIEL M.	59 Cathedral St.	Candidate.
St. John's College.			Mr. S. Z. Ammen, Instructor.		
HATHAWAY, ARTHUR S.	112 Mulberry St.	Mathematics.	NICHOLS, CHARLES W.	132 W. Madison St.	Philosophy.
S. B., Cornell University, 1879.			Yale College.		
HODGES, SEBASTIAN	83 Saratoga St.	Candidate.	NORWOOD, CHALMERS C.	150 N. Eutaw St.	Mathematics.
Racine Grammar School.			A. B., Davidson College, 1878.		
HOWELL, WILLIAM H.	433 N. Mount St.	Matriculate.	OULD, REMUS	203 W. Biddle St.	Chemistry.
Baltimore City College.			Massachusetts Agricultural College.		
HUSSEY, GEORGE F.	142 Lanvale St.	Logic.	PAGE, JAMES	77 W. John St.	Matriculate.
Haverford College.			Baltimore City College.		
INGLE, EDWARD	358 Linden Ave.	Matriculate.	PALMER, A. CHASE	96 Townsend St.	Chemistry.
Baltimore City College.			A. B., Johns Hopkins University, 1879.		
JAMES, WALTER B.	261 N. Charles St.	Biology and Chemistry.	PALMER, ALBERT G.	172 McCulloh St.	Candidate.
A. B., Yale College, 1879.			Mr. E. M. Lamb's School.		
JAMIESON, ALEXANDER F.	187 N. Howard St.	Matriculate.	PALMER, NELSON	96 Townsend St.	Matriculate.
Phillips Academy, Exeter, 1875.			Mr. G. G. Carey's School, 1877.		
JARVIS, EDMUND A.	31 W. Eager St.	Matriculate.	PETTIGREW, THOMAS	33 Denmead St.	Matriculate.
Mr. G. G. Carey's School.			Hillsboro, N. C., Military Academy.		
JENKINS, FELIX S.	2 Cathedral St.	Candidate.	PRESCOTT, PHILIP M.	132 W. Madison St.	Matriculate.
Loyola College.			Chandler Scientific Department, Dartmouth College.		
JOHNSON, JOHN	266 Myrtle Ave.	Candidate.	PRICE, HERBERT L.	48 Mt. Vernon Place.	Preliminary Medical.
McDonogh School.			Baltimore City College.		
KEELER, JAMES E.	255 N. Eutaw St.	Physics.	PUND, FREDERICK	232 N. Gay St.	Candidate.
High School, La Salle, Ill.			Mr. C. P. Grady's School.		
KEYSER, NEWBERRY A. S.	375 Madison Ave.	Preliminary Medical.	REESE, ROBERT M.	209 W. Pratt St.	Candidate.
Mr. E. M. Lamb's School.			Mr. E. M. Lamb's School.		
KIMBALL, RICHARD F.	87 Park Ave.	Candidate.	REID, HENRY F.	75 Mt. Vernon Place.	Matriculate.
Mr. C. P. Grady's School.			C. E., Pennsylvania Military Academy, 1876.		
KOYL, C. HERSCHEL	100 N. Paca St.	Physics.	ROBINSON, ADONIRAM J.	192 Mulberry St.	Special.
A. B., Victoria University, Ontario, 1877.			Baltimore City College, 1879.		
LEFTWICH, THOMAS J.	229½ N. Eutaw St.	Candidate.	ROE, CHARLES S.	237 W. Biddle St.	Candidate.
Bingham School.			Oberlin College.		
LEONARD, BENJAMIN F.	26 S. Broadway.	Biology.	ROLANDO, HENRY	Clifton, Balt. Co.	Matriculate.
M. D., University of Maryland, 1876.			Baltimore City College.		
LEWIS, JOHN S.	Bay View Asylum.	Biology.	SALE, LEE	196 W. Lombard St.	Matriculate.
M. D., College of Physicians and Surgeons, Baltimore, 1879.			Louisville High School, 1878.		
LIEBIG, GUSTAV A.	307 St. Paul St.	Matriculate.	SANDERSON, WILLIAM R.	Arlington, Balt. Co.	Chemistry and Biology.
Dr. Edward Deichmann, Instructor.			Lawrenceville (N. J.) High School.		
LINTHICUM, STEWART B.	131 W. Lanvale St.	Matriculate.	SPIEKER, EDWARD H.	123 N. Paca St.	Greek.
Mr. G. G. Carey's School, 1877.			A. B., Johns Hopkins University, 1879.		
LOWE, JOHN H.	387 Madison Ave.	Matriculate.	STEVENS, LEWIS T.	105 Charles St. Ave.	Matriculate.
Baltimore City College.			Baltimore City College.		
MAGER, WILHELM	44 Pennsylvania Ave.	Chemistry.	STOKES, HENRY N.	212 W. Hoffman St.	Chemistry.
Fresenius's Laboratory, Wiesbaden.			S. B., Haverford College, 1878.		
MAHON, ORMSBY L.	138 N. Exeter St.	Candidate.	STRICKLEN, W. RAYMOND	149 E. Madison St.	Matriculate.
Baltimore City College.			Baltimore City College, 1876.		
MAHON, ROBERT W.	138 N. Exeter St.	Physics and Chemistry.	SWIFT, MORRISON I.	123 W. Madison St.	Greek.
C. E., Lehigh University, 1876.			A. B., Williams College, 1879.		
MARSTON, WILLIAM S.	161 St. Paul St.	Mathematics.	THOMAS, HENRY M.	317 Madison Ave.	Preliminary Medical.
A. B., Harvard University, 1874.			Haverford College.		
MCDOWELL, WHITFORD L.	694 Saratoga St.	Greek.	THOMAS, WILLIAM J.	10 S. Calhoun St.	Matriculate.
Baltimore City College, 1879.			Randolph Macon College.		



TIDBALL, WILLIAM J.	150 N. Eutaw St.	<i>Greek.</i>
A. B., Davidson College, 1878.		
TIFFANY, HERBERT T.	85 Bolton St.	<i>Matriculate.</i>
Mr. S. E. Turner, Instructor.		
TORRISON, ISAAC B.	282 E. Pratt St.	<i>Greek.</i>
A. B., Norwegian Luther College, Iowa, 1879.		
TRIMBLE, ISAAC R.	187 Maryland Ave.	<i>Preliminary Medical.</i>
Shenandoah Valley Academy.		
WARFIELD, MACTIER	112 St. Paul St.	<i>Preliminary Medical.</i>
Ury House School.		
WARREN, HENRY C.	132 W. Madison St.	<i>Sanskrit and Teutonic.</i>
A. B., Harvard University, 1879.		
WHITMAN, FRANK P.	267 N. Eutaw St.	<i>Chemistry and Physics.</i>
A. B., Brown University, 1874.		
WHITNEY, MILTON, JR.	421 N. Calvert St.	<i>Chemistry.</i>
Pr. F. M. A. Newell, Instructor.		
WILHELM, LEWIS W.	64 Pennsylvania Ave.	<i>Matriculate.</i>
Baltimore City College, 1871.		
WILLIAMS, N. WINSLOW	60 Franklin St.	<i>History and Languages.</i>
Baltimore City College.		
WILSON, HENRY M., JR.	251 Madison Ave.	<i>Candidate.</i>
Mr. G. G. Carey's School.		
WOOD, P. BRYSON	187 N. Howard St.	<i>Preliminary Medical.</i>
St. John's College.		
WOODS, HIRAM, JR.	374 Eutaw Place.	<i>Biology and Physics.</i>
A. B., Princeton College, 1879.		

## SUMMARY.

President and Professors,	7
Lecturers,	6
Associates,	14
Assistants,	5

## ENROLLED STUDENTS.

Graduate Students (including 20 Fellows),*	71
Matriculated Students,	30
Students not Matriculated,	44

WHOLE NUMBER OF ENROLLED SCHOLARS, **145**

## HOLDERS OF GRADUATE SCHOLARSHIPS GIVEN BY THE PROFESSORS.

1879. A. CHASE PALMER, (A. B., Johns Hopkins),	Baltimore.
EDWARD H. SPIEKER, (A. B., Johns Hopkins),	Baltimore.

## HOLDERS OF UNIVERSITY SCHOLARSHIPS.

1878. W. W. BADEN, (Steuart Hall),	Baltimore.
J. W. BROWN, (Mr. G. G. Carey's School),	Govanstown.
1879. EDWARD INGLE, (Balt. City College),	Baltimore.
L. T. STEVENS, (Balt. City College),	Baltimore.
H. T. TIFFANY, (Mr. S. E. Turner, Instructor),	Baltimore.

\*Two of whom are absent for this year.

## Classification by States of Enrolled Students, 1879-80.

Maryland, (Baltimore 69),	86
Other States, 59	viz:
New York,	10
New Jersey,	5
Massachusetts,	4
North Carolina,	4
Ohio,	4
Virginia,	3
Connecticut,	3
Illinois,	3
Iowa,	3
Pennsylvania,	2
Kentucky,	2
District of Columbia,	2
Ontario (Canada),	2
Japan,	2
Maine,	1
Vermont,	1
Georgia,	1
Florida,	1
Louisiana,	1
Michigan,	1
Wisconsin,	1
Missouri,	1
Kansas,	1
Russia,	1

## List of Institutions at which the Graduate Students (1879-80) received their Bachelor's Degree:

Harvard University,	5
Yale College,	4
Davidson College,	4
Virginia, University of,	3
Cornell University,	3
Williams College,	3
Norwegian Luther College (Iowa),	3

Princeton College,	2
Rutgers College,	2
Michigan, University of,	2
Haverford College,	2
Johns Hopkins University,	2
Amherst College,	1
Bowdoin College,	1
Brown University,	1
Central College (Mo.),	1
Centre College (Ky.),	1
Columbia College,	1
Dartmouth College,	1
Furman University (S. C.),	1
Georgetown College (D. C.),	1
Hamilton College,	1
Hampden-Sidney College,	1
Iowa College,	1
London, University of,	1
Lehigh University,	1
Lafayette College,	1
Mass. Inst. of Technology,	1
Marietta College,	1
Northwestern University (Wis.),	1
Rochester University,	1
St. John's College,	1
Stevens Inst. of Technology,	1
Tokio (Japan), University of,	1
Victoria University (Ont.),	1
Wesleyan University,	1
Washington and Lee University,	1

## List of Institutions at which the Graduate Students (1879-80) have received the Degree of Master or Doctor.

Maryland, University of,	14
Johns Hopkins University,	4
Göttingen, University of,	2
Leipsic University of,	1
Heidelberg, University of,	1

Virginia, University of,	1
Rochester, University of,	1
Michigan, University of,	1
Amherst College,	1
Iowa College,	1
Georgetown College (D. C.),	1
Marietta College,	1
Washington and Lee University,	1
Washington University (Balt.),	1
Physicians and Surgeons, College of, (Balt.),	1

## Summary of Students Enrolled during the last three Academic Years.

	Graduates, including Fellows.	Matriculates.	Non-Matriculates.	Total.
1876-77,	54	12	23	89
1877-78,	58	24	22	104
1878-79,	63	25	35	123
*1879-80,	71	30	44	145

\*At the opening of the fourth year.

DURING the academic year 1878-79 the following special classes were instructed, in addition to those above enumerated:

Persons attending a Course in Hydrodynamics,	8
Persons attending a Course on the Theory of the Telescope,	15
Persons attending the Chesapeake Zoölogical Laboratory,	10
Teachers attending a class in Zoölogy,	15
Medical Students attending Demonstrations in Animal Physiology,	25
Medical Students attending a course in Animal Histology,	12

Average attendance upon public lectures 1879-80, (not included in either of above summaries).

General Biology,	66	German Empire,	258
French Literature,	35	Dante,	152
Mediaeval History,	83	Thirty Years War,	192
Greek History,	39	Botany,	89
Ethics,	123	Political Science,	87
Greek Scriptures,	12	Greek Archæology,	88
Hebrew Scriptures,	41		

# HOURS OF LECTURES AND RECITATIONS—SEPTEMBER to DECEMBER, 1879.

Hours.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	SATURDAY.
A. M.						
9	Chemistry (Prof. Remsen). Aristotle (Prof. Morris). Latin Prose (Dr. Warren). Quaternions (Dr. Story).  Logic (Mr. Peirce). Sanskrit, Proverbs (Dr. Lanman).	Chemistry (Prof. Remsen). Greek Prose (Prof. Morris). Horace (Dr. Warren). Theory of Equations (Mr. Franklin). Greek Exercise (Prof. Gildersleeve). Hymns of Rig-Veda (Dr. Lanman).	Chemistry (Dr. Morse). Aristotle (Prof. Morris). Horace (Dr. Warren). Quaternions (Dr. Story). Gothic (Mr. Brandt). Crystallography (Dr. Irby). Logic (Mr. Peirce).	Chemistry (Prof. Remsen). Aristotle (Prof. Morris). Horace (Dr. Warren). Theory of Equations (Mr. Franklin).  Logic (Mr. Peirce). Sanskrit, Proverbs (Dr. Lanman).	Chemistry (Prof. Remsen). Greek Prose (Prof. Morris). Horace (Dr. Warren). Quaternions (Dr. Story).  Greek Exercise (Prof. Gildersleeve). Hymns of Rig-Veda (Dr. Lanman).	Chemistry (Dr. Morse). History (Dr. Adams). Physics, Laboratory Work (Dr. Hastings). Saturday Class 9 A. M.—5 P. M.  Elementary Sanskrit (Dr. Lanman).
10	Physics (Dr. Hastings). Homer (Prof. Morris).  Advanced Morphology (Dr. Brooks).	Physics (Dr. Hastings). Greek Prose (Prof. Morris). Terence (Dr. Warren). English (Mr. Cook). Elliptic Functions (Dr. Story). Advanced Physiology (Prof. Martin).	Physics (Dr. Hastings). Homer (Prof. Morris). Terence (Dr. Warren).  Elliptic Functions (Dr. Story). Advanced Morphology (Dr. Brooks).	Physics (Dr. Hastings). Homer (Prof. Morris). Terence (Dr. Warren). English (Mr. Cook). Elliptic Functions (Dr. Story). Advanced Morphology (Dr. Brooks).	Physics (Dr. Hastings). Homer (Prof. Morris). Terence (Dr. Warren). Anglo Saxon (Mr. Cook).  Advanced Physiology (Dr. Martin).	Physics, Lecture to Advanced Students (Dr. Hastings).  English (Mr. Cook).  Advanced Morphology (Dr. Brooks).
11	Elementary Biology (Prof. Martin). Lessing, Nathan (Mr. Brandt).  Calculus (Mr. Franklin).	Osteology (Dr. Brooks). German Prose Composition (Mr. Brandt). New Testament Greek (Mr. Cross). Mathematical Physics (Prof. Rowland). Anglo Saxon (Mr. Cook).	Elementary Biology (Prof. Martin). Schiller, Prose (Mr. Brandt). New Testament Greek (Mr. Cross). Mathematical Physics (Prof. Rowland). Calculus (Mr. Franklin).	Elementary Biology (Prof. Martin). Lectures on German Ballads (Mr. Brandt).  Mathematical Physics (Prof. Rowland). Anglo Saxon (Mr. Cook).	Osteology (Dr. Brooks). Schiller, Prose (Mr. Brandt). New Testament Greek (Mr. Cross). Mathematical Physics (Prof. Rowland). Calculus (Mr. Franklin).	Elementary Biology (Prof. Martin). Gothic (Mr. Brandt). Crystallography (Dr. Irby).
M.						
12	Greek Lyric Poetry (Prof. Gildersleeve). German Exercise (Mr. Brandt).  French: Class B, Minor Course (Mr. Elliott). Higher Plane Curves (Dr. Story). Analytical Chemistry (Dr. Morse).	Pindar (Prof. Gildersleeve). Goethe, Prose (Mr. Brandt).  French: Class B, Minor Course (Mr. Elliott). Higher Plane Curves (Dr. Story).	Greek Seminary (Prof. Gildersleeve). Goethe, Prose (Mr. Brandt).  French: Class B, Minor Course (Mr. Elliott). Analytical Chemistry (Dr. Morse).	Pindar (Prof. Gildersleeve). Bluntschli, Volkerrecht (Mr. Brandt). French: Class B, Minor Course (Mr. Elliott). Higher Plane Curves (Dr. Story). Analytical Chemistry (Dr. Morse).	Greek Seminary (Prof. Gildersleeve). Bluntschli, Volkerrecht (Mr. Brandt). French: Class B, Minor Course (Mr. Elliott). Higher Plane Curves (Dr. Story). Analytical Chemistry (Dr. Morse).	
P. M.						
1	French: Class A, Minor Course (Mr. Elliott). Differential Equations (Dr. Story). Conics (Mr. Franklin).	French: Class A, Minor Course (Mr. Elliott). Theory of Numbers (Prof. Sylvester).  French: Major Course (Mr. Elliott).	French: Class A, Minor Course (Mr. Elliott). Differential Equations (Dr. Story). Conics (Mr. Franklin).	French: Class A, Minor Course (Mr. Elliott). Differential Equations (Dr. Story). Conics (Mr. Franklin). Vilhehardouin (Mr. Elliott).	French: Class A, Minor Course (Mr. Elliott). Theory of Numbers (Prof. Sylvester).	
2	Drawing (Mr. Newell).	Physiography (Dr. Clarke).  New Testament Exegesis (Mr. Cross, 2.30 P. M.).		Physiography (Dr. Clarke).	Drawing (Mr. Newell).	
3		Physiological Demonstrations to Medical Students (Prof. Martin 3.30 P. M.).  Mediæval Logic (Mr. Peirce).			Romance Languages, Lecture to Advanced Students (Mr. Elliott).	Physiological Demonstrations to Medical Students (Dr. Sihler, 3.30 P. M.).
4	History (Dr. Adams). English (Mr. Cook). Plautus (Dr. Warren).	History (Dr. Adams). English (Mr. Cook).	History (Dr. Adams). English (Mr. Cook). Elementary Sanskrit (Dr. Lanman).	History (Dr. Adams). English (Mr. Cook).	History (Dr. Adams). English (Mr. Cook). Provengal (Mr. Elliott).	
5	Public Lecture. Schiller, <i>Neffe als Onkel</i> (Mr. Brandt).	Public Lecture.  Spherical Harmonics (Dr. Craig, 7 P. M.).	Schiller, <i>Neffe als Onkel</i> (Mr. Brandt).	Public Lecture.  Calculus of Variations (Dr. Craig, 7 P. M.).	Public Lecture. Schiller, <i>Neffe als Onkel</i> (Mr. Brandt). Calculus of Variations (Dr. Craig, 7 P. M.). Old French and Wallachian (Mr. Elliott).	

### *Death of Herman Voorhees, a Fellow of the Johns Hopkins University.*

BORN AUGUST 18, 1852.

DIED OCTOBER 14, 1879.

On Tuesday last, at Ballston, died HERMAN VOORHEES, who, for the last ten years, has been known with great favor in this city, and who, at the time of his death, was about twenty-seven or twenty-eight years of age. He entered the Rensselaer Polytechnic Institute in 1869, and during the four years of his course of study at that school of science, maintained a high standing. He was graduated in 1873 with the degree of civil engineer, and in the fall of 1875 went to Germany and entered the University of Göttingen, and there pursued the study of chemistry under the celebrated scientist, Prof. Wöhler. His intention was to remain there two years, and to obtain the degree of Ph. D., but he was prevented from accomplishing this design by the death of his father, and returned home in the fall of 1876. Becoming then a member of the Faculty of the Rensselaer Polytechnic Institute, he was chosen as assistant to the chairs of geodesy and descriptive geometry. This position he held for two years, and then in the fall of 1878, entered the Johns Hopkins University at Baltimore, Md., in order to continue his chemical studies under Prof. Ira Remsen, an authority of high repute in the study of organic chemistry. At this university there are fellowships lasting for a year and renewable yearly, to which certain emoluments and privileges are attached. To win one of these fellowships was the desire of Mr. Voorhees, and for this object he strove. While most arduously engaged in his studies, he was attacked last spring with a hemorrhage, the attack occurring as he was one day pursuing his investigations in the laboratory of the University. About this time he also received notice that he had gained the fellowship which he had so ardently sought. But he never lived to enjoy its privileges, or to honor the choice of those who had so esteemed his ability and learning, for although hopes of his recovery were entertained, the improvement upon which these hopes were based proved to be only temporary. He passed the greater part of the last summer among the Adirondacks. Returning to the house of his brother, Theodore Voorhees, in the late summer, he there remained, the subject of the kindest and most considerate attentions, until his death.—*From the Troy Morning Whig, of Thursday morning, October 16, 1879.*

### FOURTH ANNUAL REPORT.

The Annual Report of the President of the University is now ready for distribution.

It contains seventy-six pages, including the appendix. It gives a review of the last three years, by which the public may judge not only of the plans adopted, but also of their operation during this preliminary period. Among the topics discussed are university and collegiate work, fellowships, graduate students, undergraduate students, library and apparatus, relations to other institutions, investigations and publications, examinations and degrees, public lectures, teachers' class in zoölogy, instruction preliminary to medical studies. The appendix has several noteworthy tabular statements, *e. g.*:

Roll of Fellows, with a brief statement of their academic work.

Enumeration of Classes.

Lists of Scientific Apparatus.

Lists of Scientific Papers published by members of the University.

### BRIEF ANNOUNCEMENTS.

PROFESSOR JOHN TROWBRIDGE, of Harvard University, will deliver a course of twelve public lectures on the PHILOSOPHY OF PHYSICS, beginning January 20, 1880.

The aim of this course will be to present the subjects of Mechanics, Heat, Sound, Light, Electricity and Magnetism in a logical way; breaking down the barriers by which they are fenced about in popular estimation. Consideration will be given to the methods of thought which scientific men adopt, and they will be contrasted with those followed in other intellectual fields.

The lecturer will endeavor to give to the subject of Physics an interesting and humanitarian aspect, and to call attention to the importance of the study.

PROFESSOR J. WILLARD GIBBS, of Yale College, will lecture on THEORETICAL DYNAMICS, four or five times weekly, during January and February 1880, beginning on Monday, January 5.

The principle of virtual velocities will be taken as the point of departure, and the subject will be treated somewhat on the plan of the *Mécanique Analytique*; but other methods of developing the subject will be noticed and critically compared with that of Lagrange. The notations, generally known as quaternionic, in which direction and magnitude are expressed by a single letter, will be used to a considerable extent, but not so as to presuppose any knowledge of Quaternions, as all notions and notations borrowed from that science will be fully explained, and their essential properties demonstrated.

The object of this course will be to develop the general principles of Mechanics in their mutual connections, and to explain its most important methods.

*Reading.* The reading of the *Mécanique Analytique* is strongly recommended. For the purposes of preliminary study by less advanced students, Sturm's *Cours de Mécanique* or Todhunter's *Analytical Statics*, with Tait and Steele's *Dynamics of a Particle*, may be recommended; but many other treatises, as those of Delaunay, Duhamel, Laurent, Resal, etc., would perhaps be equally suitable.

A knowledge of the elements of the Calculus of Variations is indispensable to all pursuing this course.

MR. CHARLES S. PEIRCE, of the U. S. Coast and Geodetic Survey, has begun his lectures on Logic to special students of that subject. He may be seen at his study, 187 North Howard Street.

S. F. CLARKE (Ph. D., Johns Hopkins) has been engaged to give a course of instruction in Physical Geography to the students who have entered upon the course preliminary to medicine. A small appropriation for maps has been made by the Trustees.

DR. THOMAS CRAIG, of the U. S. Coast and Geodetic Survey, has begun courses of lectures on the Calculus of Variations, and on Spherical Harmonics.

MR. HUGH NEWELL, Instructor of Drawing in the Maryland Institute, has been invited to give instruction at the Johns Hopkins University, and particularly to students who are beginning a course of study in the Biological Sciences.

MR. C. L. WOODWORTH (A. M., Amherst) is giving a course of instruction in the management and cultivation of the voice, to individual members of this University who apply to him.

J. R. McD. IRBY (Ph. D., Göttingen), Fellow in Mineralogy, has formed a class for the study of Crystallography.

MR. A. V. E. YOUNG, of the University of Michigan, has resigned his Fellowship in Chemistry, in order to have more time for private pursuits.

THE next number of these Circulars will contain a statement showing in detail all the lectures and classes now in progress or announced for the current year in mathematics and physics; library bulletins stating the principal accessions of books and new periodicals since September 1, 1879, by the University and other Baltimore libraries; and a full schedule of the courses of public lectures now in progress in Baltimore.

# American Journal of Mathematics

## PURE AND APPLIED.

Editor in Chief, J. J. SYLVESTER, Professor of Mathematics; Associate Editor in Charge, WILLIAM E. STORY, Associate in Mathematics; with the co-operation of SIMON NEWCOMB, H. A. NEWTON and H. A. ROWLAND.

Issued under the auspices of the Johns Hopkins University.

Published in the quarto form and in numbers appearing four times a year. Subscription Price per Volume, of about 384 pages, \$5 00; price per number \$1.50. Vol. I, 1878-79 (388 pp., 4 plates) can still be furnished at the subscription price. All communications should be addressed to the Associate Editor in charge.

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| <ol style="list-style-type: none"> <li>1. ON THE GEOGRAPHICAL PROBLEM OF THE FOUR COLOURS, by A. B. KEMPE, London, England.</li> <li>2. NOTE ON THE PRECEDING PAPER by WILLIAM E. STORY.</li> <li>3. THE QUATERNION FORMULAE FOR QUANTIFICATION OF CURVES, SURFACES AND SOLIDS. AND FOR BARYCENTRES, by W. I. STRINGHAM, Fellow of Johns Hopkins University.</li> <li>4. ON THE DYNAMICS OF A "CURVED BALL," by ORMOND STONE, Cincinnati, O.</li> <li>5. NOTE ON DETERMINANTS AND DUADIC SYNTHEMES, by J. J. SYLVESTER.</li> <li>6. TABLES OF THE GENERATING FUNCTIONS AND GROUNDFORMS FOR THE BINARY QUANTICS OF THE FIRST TEN ORDERS, by J. J. SYLVESTER, assisted by F. FRANKLIN, of the Johns Hopkins University.</li> </ol> | <ol style="list-style-type: none"> <li>7. NOTE ON THE PROJECTION OF THE GENERAL LOCUS OF SPACE OF FOUR DIMENSIONS INTO SPACE OF THREE DIMENSIONS, by THOMAS CRAIG, Fellow of Johns Hopkins University.</li> <li>8. ON THE MOTION OF AN ELLIPSOID IN A FLUID, by THOMAS CRAIG, Fellow of Johns Hopkins University.</li> <li>9. A NEW PROOF OF THE THEOREM OF RECIPROCITY, by DR. JULIUS PETERSEN, Copenhagen, Denmark.</li> <li>10. ON A NEW ACTION OF THE MAGNET ON ELECTRIC CURRENTS, by E. H. HALL, Fellow of Johns Hopkins University.</li> <li>11. ON TERNARY CUBIC-FORM EQUATIONS. CHAPTER I. ON THE RESOLUTION OF NUMBERS INTO SUMS AND DIFFERENCES OF TWO CUBES, by J. J. SYLVESTER.</li> </ol> |
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# AMERICAN CHEMICAL JOURNAL.

EDITED, WITH THE AID OF CHEMISTS AT HOME AND ABROAD,

By IRA REMSEN, Professor of Chemistry in the Johns Hopkins University.

Contains original articles by American and foreign chemists; reviews of works relating to chemical science; reports on progress in the various departments of Chemistry; and items of general interest to Chemists.

Published in numbers of from 64 to 80 pages; six numbers forming a volume of from 400 to 500 pages.

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Subscriptions and communications should be addressed to the Editor.

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# AMERICAN JOURNAL OF PHILOLOGY.

Edited, with the co-operation of leading scholars, by B. L. GILDERSLEEVE, Professor of Greek in the Johns Hopkins University.

This Journal will be open to original communications in all departments of Philology, classical, comparative, oriental and modern; yet a large portion of the space will be given up to condensed reports of current philological work, and arrangements have been made to present regularly summaries of the chief articles in the leading philological journals of Europe, while a close watch will be kept over the fragmentary and occasional literature to which the isolated American scholar seldom has full access. The reviews of books will be intrusted as far as possible to specialists: and it is hoped that the Journal will meet a want that has long been acknowledged among American scholars, and serve as a means of inter-communication and as an organ of independent criticism.

The Journal will be in the ordinary review form, four numbers to constitute a volume, of from 400 to 500 pages, one volume to appear each year.

The subscription price will be three dollars a year, payable upon the receipt of the first number. Vol. I, No. I is now in press. All communications should be addressed to the Editor.