NINETY-EIGHTH

ANNUAL CATALOGUE

OF THE

MEDICAL SCHOOL

(BOSTON)

OF

HARVARD UNIVERSITY.

1880-81.

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THE MEDICAL SCHOOL.

BOSTON.

Instruction in this School is given by lectures, recitations, clinical teaching, and practical exercises, uniformly distributed throughout the academic year. The year begins on the Thursday following the last Wednesday in September,* and ends on the last Wednesday in June. There is a recess at Christmas, beginning December 23, and ending January 2; and a spring recess, beginning on the Wednesday before Fast Day, and ending on the following Tuesday, inclusive.

The course of instruction has been greatly enlarged, and is so arranged as to carry the student progressively and systematically from one subject to another, in a just and natural order.

In the subjects of anatomy, histology, chemistry, and pathological anatomy, laboratory-work is substituted for, or added to, the usual didactic lectures, and is as much required of every student as attendance at lectures and recitations.

The course of study recommended by the Faculty covers four years, but until further notice the degree of Doctor of Medicine will continue to be given upon the completion of three years of study, to be as ample and full as heretofore. The degree of Doctor of Medicine *cum laude* will be given to candidates who have pursued a complete four years' course, and obtained an average of 75 per cent. upon all the examinations of this course. In addition to the ordinary degree of Doctor of Medicine as heretofore obtained, a certificate of attendance on the studies of the fourth year will be given to such students desiring it as shall have attended the course, and have passed a satisfactory examination in the studies of the same.

Instead of the customary oral examination for the degree of Doctor of Medicine, held at the end of the three and four years' period of study, a series of written examinations on all the main subjects of medical instruction has been distributed for regular students through their entire course of study. Every candidate for the degree must pass a satisfactory examination in every one of the principal departments of medical instruction, at some time during his period of study.

* That the time of study shall count as a full term, students must present themselves within the first week of the term.

Members of any one department of Harvard University have a right to attend lectures and recitations in any other department, without paying additional fees. Students in the Medical School who wish to avail themselves of this opportunity of pursuing scientific or other studies, may do so without loss of time counted as medical study, to such extent and in such manner as the Medical Faculty shall in each case prescribe. Undergraduates intending to study medicine are advised to pay special attention to the study of Natural History, Chemistry, Physics, and the French and German languages, while in College.

FACULTY.

CHARLES W. ELIOT, LL.D., *President.*
CALVIN ELLIS, M.D., *Dean, and Jackson Professor of Clinical Medicine.*
OLIVER W. HOLMES, M.D., LL.D., *Parkman Professor of Anatomy.*
HENRY J. BIGELOW, M.D., *Professor of Surgery.*
FRANCIS MINOT, M.D., *Hersey Professor of the Theory and Practice of Physic.*
JOHN P. REYNOLDS, M.D., *Professor of Obstetrics.*
HENRY W. WILLIAMS, M.D., *Professor of Ophthalmology.*
DAVID W. CHEEVER, M.D., *Professor of Clinical Surgery.*
JAMES C. WHITE, M.D., *Professor of Dermatology.*
ROBERT T. EDES, M.D., *Professor of Materia Medica.*
HENRY P. BOWDITCH, M.D., *Professor of Physiology.*
FREDERICK I. KNIGHT, M.D., *Instructor in Laryngoscopy.*
CHARLES B. PORTER, M.D., *Instructor in Surgery.*
J. COLLINS WARREN, M.D., *Instructor in Surgery.*
REGINALD H. FITZ, M.D., *Shattuck Professor of Pathological Anatomy.*
WILLIAM L. RICHARDSON, M.D., *Instructor in Obstetrics.*
THOMAS DWIGHT, M.D., *Instructor in Topographical Anatomy and Histology.*
EDWARD S. WOOD, M.D., *Professor of Chemistry.*
HENRY H. A. BEACH, M.D., *Demonstrator of Anatomy.*
WILLIAM H. BAKER, M.D., *Instructor in Gynæcology.*
WILLIAM B. HILLS, M.D., *Instructor in Chemistry.*
WILLIAM F. WHITNEY, M.D., *Curator of the Anatomical Museum.*

OTHER INSTRUCTORS.

FRANK W. DRAPER, M.D., *Lecturer on Forensic Medicine.*
CHARLES F. FOLSOM, M.D., *Lecturer on Mental Diseases.*
HENRY P. QUINCY, M.D., *Assistant in Histology.*
AMOS L. MASON, M.D., *Assistant in Clinical Medicine.*

THOMAS WATERMAN, M.D., *Assistant in Anatomy.*
EDWARD N. WHITTIER, M.D., *Assistant in Clinical Medicine.*
WILLIAM P. BOLLES, M.D., *Instructor in Materia Medica.*
ELBRIDGE G. CUTLER, M.D., *Assistant in Pathological Anatomy.*
FREDERICK C. SHATTUCK, M.D., *Assistant in Clinical Medicine.*
W. STURGIS BIGELOW, M.D., *Assistant in Surgery.*
GEORGE M. GARLAND, M.D., *Assistant in Physiology.*
MAURICE H. RICHARDSON, M.D., *Assistant in Anatomy.*
CHARLES S. MINOT, S.D., *Lecturer on Embryology.*

The following gentlemen will give special clinical instruction : —

FRANCIS B. GREENOUGH, M.D., and EDWARD WIGGLESWORTH, M.D., *in Syphilis.*
J. ORNE GREEN, M.D., and CLARENCE J. BLAKE, M.D., *in Otology.*
JOSEPH P. OLIVER, M.D., and THOMAS M. ROTCH, M.D., *in Diseases of Children.*
SAMUEL G. WEBBER, M.D., and JAMES J. PUTNAM, M.D., *in Diseases of the Nervous System.*

STUDENTS.

Course for Graduates.

Appleton, William, Jr., M.D.,	*Boston.*
Clarke, Samuel Bartlett, M.D.,	*Salem.*
Draper, Joseph Rutter, A.B. (*Williams Coll.*), M.D. (*Berk. Med. Coll.*),	*So. Boston.*
Ernst, Harold Clarence, A.B., M.D.,	*Jamaica Plain.*
Frye, Edmund Bailey, M.D. (*Dart. Coll.*),	*Boston.*
Green, Charles Montraville, A.B., M.D.,	*Boston.*
Terry, Charles Church, M.D. (*N. Y. Med. Coll.*),	*Fall River.*

Fourth Class.

Blanchard, Benjamin Seaver,	*Boston.*
Elliot, Edward Pearson, A.B.,	*Somerville.*
Morton, Nathaniel Bowditch,	*Boston.*
Tower, Charles Bates,	*Cambridge.*
Twitchell, George Pierce,	*Keene, N.H.*
Wakefield, Alley Talbot, A.B.,	*Cambridge.*
Warren, Edward Winslow, A.B.,	*Boston.*
Whitman, Royal,	*Boston.*
Whitney, Herbert Baker, A.B.,	*Leominster.*

Third Class.

Adams, Henry Fiske,	*Peterboro', N.H.*
Applegate, William A,	*Yellow Springs, O.*
Atwood, Frank Sumner,	*Salem.*
Baker, John Walter,	*Chelsea.*
Bartlett, Frederic Russell,	*Worcester.*
Beckwith, Fred Jason, A.B. (*Yale Coll.*),	*New London, Conn.*
Bloom, Isadore Nathan, A.B. (*Yale Coll.*),	*Louisville, Ky.*
Boutwell, Henry Winslow,	*Medford.*
Bradford, Cary Carpenter, A.B. (*Brown Univ.*),	*W. Woodstock, Conn.*
Bradley, Charles How,	*Haverhill.*
Brainerd, John Bliss,	*St. Albans, Vt.*
Browne, William Tyler, PH.B. (*Yale Coll.*),	*Lisbon, Conn.*
Buck, Howard Mendenhall, A.B.,	*Boston.*
Call, Charles Henry,	*Lowell.*
Clark, Joseph Eddy,	*Boston.*
Clarke, Maurice Dwight, A.B. (*Amherst Coll.*),	*E. Cambridge.*
Coe, Henry Clark, A.B. (*Yale Coll.*),	*Boston.*
Colt, Henry, Jr., A.B. (*Williams Coll.*),	*Pittsfield.*

Cushman, George Thomas,	*Boston.*
Denny, Charles Frederic,	*Boston.*
Deroin, Francis Xavier,	*S. Ely, Canada.*
Doble, Ernest Edgar,	*W. Quincy.*
Dodge, George Smith,	*Woburn.*
Dow, George William, A.B. (*Brown Univ.*),	*Lawrence.*
Drew, Frank Haynes,	*Boston.*
Dunbar, Franklin Asaph, A.B.,	*Cambridge.*
Galligan, Edward Francis,	*Taunton.*
Gerould, Joseph Bowditch, B.S. (*Dart. Coll.*),	*Keene, N.H.*
Goddard Thacher,	*Boston.*
Godding, Clarence Miles, A.B. (*Brown Univ.*),	*Providence, R.I.*
Goodell, George Zina,	*Salem.*
Gould, Charles Asahel,	*Newtonville.*
Griffin, Arthur George,	*Litchfield, N.H.*
Hall, Josiah Newhall, B.S. (*Mass. Agr. Coll.*),	*Revere.*
Harrington, Charles, 2d, A.B.,	*Boston.*
Harrower, David, Jr.,	*Peace Dale, R.I.*
Hayes, Edward Stephen,	*Leavenworth, Kas.*
Hayward, Walter Sumner, A.B. (*Brown Univ.*),	*Brockton.*
Hewins, Parke Woodbury, A.B.,	*Taunton.*
Holden, William Daniel,	*Haverhill.*
Holyoke, Frank,	*W. Medford.*
Homans, John, 2d, A.B.,	*Boston.*
Howe, James Sullivan,	*Bolton.*
Huse, Charles Archelaus, A.B. (*Brown Univ.*),	*Worcester.*
Jarvis, Leonard, B.S. (*Dart. Coll.*),	*Claremont, N.H.*
Jewett, Milo Augustus,	*Milwaukee, Wis.*
Johnson, Herbert Shattuck, A.B. (*Amherst Coll.*),	*Lowell.*
Kibbey, William Beckford,	*Washington, D.C.*
King, James Henry, A.B. (*Univ. of Vt.*),	*Benson, Vt.*
Knapp, Philip Coombs, Jr., A.B.,	*Boston.*
Lombard, Warren Plimpton, A.B.,	*W. Newton.*
Lyons, Herbert Henry, A.B. (*Bost. Coll.*),	*Milford.*
McMichael, Willis Brooks, A.B. (*Boston Univ.*),	*Boston.*
Mead, Julian Augustus, A.B.,	*W. Acton.*
Metcalf, Simeon McCausland,	*Somerville.*
Millerick, Daniel Edward, A.B. (*Holy Cross Coll.*),	*Boston.*
Nelson, Samuel Newell, A.B.,	*Milford.*
Newell, Otis Kimball,	*Boston.*
Nickerson, Asa Harden,	*Providence, R.I.*
Palmer, Lewis Merritt, A.M. (*Bates Coll.*),	*Litchfield, Me.*
Perkins, Henry Phelps, Jr.,	*Lowell.*
Prior, Charles Edwin, A.B.,	*Melrose.*

Richardson, Dana Putnam,	*Leominster.*
Russell, Eben George,	*E. Deering, Me.*
Sawin, Charles Dexter, B.S. (*Mass. Inst. Tech.*),	*Boston.*
Shepard, George Clarence, A.B.,	*Boston.*
Sherman, Frank Morton,	*Watertown.*
Stearns, Charles Goddard, A.B. (*Amherst Coll.*),	*Boston.*
Sturgis, Russell, 3d, A.B.,	*Boston.*
Taylor, Frederic Weston, A.B.,	*Cambridge.*
Vickery, Herman Frank, A.B.,	*Weymouth.*
Wetherbee, Roswell,	*Acton.*
Wilcox, Reynold Webb, A.B. (*Yale Coll.*),	*Madison, Conn.*
Wood, Henry Austin, A.B.,	*Upton.*
Woodward, Lemuel Fox, S.B.,	*Worcester.*

Second Class.

Aiken, William Henry, A.B.,	*Somerville.*
Allen, Bradford, S.B. (*Amherst Coll.*),	*E. Bridgewater.*
Allen, Gardner Weld, A.B.,	*Cambridge.*
Allen, Louis Edmund, A.B. (*Williams Coll.*),	*Pittsfield.*
Atkins, Edgar Chester,	*Marlboro'.*
Baird, Reed McColloch,	*Wheeling, W. Va.*
Baker, David Erastus, S.B. (*Bost. Univ.*),	*Franklin.*
Bell, Robert,	*Boston.*
Bigelow, Enos Hoyt, B.S. (*Worcester Free Inst.*),	*Framingham.*
Bowen, John Templeton, A.B.,	*Boston.*
Briggs, Frederic Melancthon, A.B.,	*Boston.*
Broderick, Thomas Joseph,	*Cambridge.*
Brooks, Stephen Driver, A.B. (*Amherst Coll.*),	*Salem.*
Burdick, Allen,	*St. Albans, Vt*
Burgess, Arthur Joseph,	*Cambridge.*
Burr, Charles Henry, S.B.,	*Cambridge.*
Chandler, Frederick Alpheus,	*Addison, Me.*
Chandler, Frederick Emerson,	*Boston.*
Cheever, Clarence Alonzo,	*Wrentham.*
Coggeshall, Henry Tisdale,	*Newport, R.I.*
Conant, William Merritt, A.B.,	*Bridgewater.*
Crosby, John Abbott, S.B. (*Olivet Coll., Mich.*),	*N. Buffalo, Mich.*
Delano, Samuel, A.B.,	*W. Medford.*
Devine, William Henry,	*Boston.*
Doubleday, Edwin Thompson,	*New York, N.Y.*
Dunn, Charles Stein,	*Dover, N.H.*
Fales, Willard Henry, A.B. (*Tufts Coll.*),	*Boston.*
Faunce, Robert Harris,	*Sandwich.*
Foster, Warren Wooden,	*E. Killingly, Conn.*

Galloupe, Charles William, 2d, A.B.,	*Lynn.*
Gay, Frederick Lewis,	*Boston.*
Goss, Ossian Wilbur,	*Lake Village, N.H.*
Haven, George,	*Portsmouth, N.H.*
Heustis, James Walter,	*Boston.*
Hibbard, Nathaniel, A.B. (*Brown Univ.*),	*Providence, R.I.*
Hodgdon, Andrew Hall, A.B.,	*Arlington.*
Holden, Charles Sumner,	*Leesburg, Fla.*
Holmes, William Dennison,	*Boston.*
Hubbard, Rufus Peabody,	*Wells, Me.*
Huse, George Wood, A.B.,	*Newburyport.*
Jackson, Alton Atwell,	*E. Jefferson, Me.*
Johnson, Frank Mackie, S.B. (*Amherst Coll.*),	*Norwich, Conn.*
Jordan, Herbert Stanton,	*Brownfield, Me.*
Kennedy, Fred William,	*Lawrence.*
Kimball, Samuel Ayer, A.B. (*Yale Coll.*),	*Bath, Me.*
Lawler, Thomas Joseph,	*Boston.*
MacKenzie, Freeman Alexander,	*Boston.*
Martin, Francis Coffin, A.B.,	*Boston.*
Mason, Atherton Perry, A.B.,	*Fitchburg.*
McLauthlin, Herbert Weston, A.B. (*Amherst Coll.*),	*Kingston.*
McOwen, William Henry,	*Lowell.*
Miller, George Norton, A.B.,	*New York, N.Y.*
Mills, Charles Fisher,	*Brooklyn, N.Y.*
Morris, John Gavin, A.B.,	*Boston.*
Morrison, William Frank,	*Bristol, R.I.*
Murphy, Joseph Briggs,	*Taunton.*
Newhall, Herbert William, A.B.,	*Lynn.*
Norwood, Ephraim Wood, A.M. (*Colby Univ.*),	*Boston.*
Otis, Henry Sharwood,	*Exeter, N.H.*
Otterson, William David,	*Nashua, N.H.*
Preble, Wallace, A.B.,	*Portland, Me.*
Richards, George Edward, A.B.,	*Cambridge.*
Rundlett, Henry Albert Pierce, A.B. (*Bates Coll.*),	*Dover, N.H.*
Shea, Andrew Francis,	*Cambridge.*
Sinclair, Charles Frederic, D.B.,	*Boston.*
Smith, Asbury Gilbert,	*Stoneham.*
Smith, Willard Everett, A.B.,	*Newtonville.*
Sparhawk, Clement Willis,	*Cambridge.*
Stevens, William Caldwell, A.B. (*Amherst Coll.*),	*Worcester.*
Sullivan, James Francis,	*Lowell.*
Swan, Roscoe Wesley, S.B. (*Mass. Agr. Coll.*),	*Framingham.*
Sweeny, Henry Lee,	*Hanover.*
Thompson, George Eben, S.B. (*Dart. Coll.*),	*Dover, N.H.*

Tremaine, William Allen,	*Waterbury, Conn.*
Trumbull, John, A.B. (*Yale Coll.*),	*Valparaiso, Chili.*
Tuckerman, Frederick, S.B. (*Boston Univ.*),	*Boston.*
Walsh, Frank Winfield,	*Boston.*
Weil, Frank Edward,	*N. Andover.*
Welch, Stephen Albro, A.B. (*Brown Univ.*),	*Warren, R.I.*
Wells, James Lee, A.B. (*Brown Univ.*),	*Hopkinton, R.I.*
Wetherell, Arthur Bryant,	*Southampton.*
White, Leonard Darling,	*Uxbridge.*
Whiteside, George Henry Whittaker,	*Lowell.*
Whitridge, Roland Barker,	*Boston.*
Woodbury, George Franklin,	*Sutton.*
Wyman, Morrill, Jr.,	*Cambridge.*

First Class.

Atwood, Charles Augustus,	*Taunton.*
Ayer, Silas Hibbard,	*Chelsea.*
Baldwin, Henry Cutler, A.B.,	*Somerville.*
Barstow, Henry Taylor, A.B.,	*Boston.*
Brackett, Elliott Gray,	*Newton.*
Briard, William Henry Lighthill,	*Cambridge.*
Brown, Daniel Joseph,	*Milford.*
Buckley, Philip Townsend, A.B.,	*Boston.*
Carll, Walter Edward,	*Greenfield.*
Chase, George Thorndike, A.B.,	*Salem.*
Clark, Arthur Wellington,	*Lawrence.*
Cogswell, Charles Hale, A.B. (*Dart. Coll.*),	*North Easton.*
Coolbroth, Frank Herbert,	*Hollidaysburgh, Penn.*
Couch, Joseph Daniel,	*Boston.*
Cutts, Harry Madison, A.B. (*Coll. of N.J.*),	*Washington, D.C.*
Daniels, Frank Herbert, A.B.,	*Boston.*
Donovan, Michael Ricard, A.B. (*Georgetown Coll.*),	*Lynn.*
Field, James Brainerd, A.B.,	*Boston.*
Finnigan, Patrick Joseph, A.B. (*Holy Cross Coll.*),	*Worcester.*
Foster, Charles Chauncy, A.B.,	*Cambridge.*
French, George Morrill, A.B. (*Boston Univ.*),	*Sandown, N.H.*
Friend, Walter Morrison, A.B. (*Tufts Coll.*),	*Gloucester.*
Gage, James Arthur, A.M.,	*Lowell.*
Gavin, George Freeborn,	*Dublin, Ireland.*
Glennon, Michael, A.B. (*Boston Coll.*),	*Stoughton.*
Grimm, Charles Henry,	*San Francisco, Cal.*
Guitéras, Ramon Benjamin,	*Bristol, R.I.*
Hall, William Dudley, A.B.,	*Bridgeport, Conn.*
Holden, Francis Marion,	*Boston.*

Hooker, Edward Dwight,	*Cambridge.*
Jack, Frederick Lafayette,	*Boston.*
Jackson, Henry, A.B.,	*Boston.*
Keith, Wallace Cushing, A.B. (*Amherst Coll.*),	*Campello.*
Kemble, Laurence Grafton,	*Salem.*
Kilburn, Henry Whitman, A.B.,	*Lowell.*
Kimpton, Edwin Sewell,	*E. Somerville.*
Kinnier, Dennis Francis,	*Randolph.*
Klinghammer, William Jerome, A.B. (*Tufts Coll.*),	*Somerville.*
Knowles, William Fletcher, Jr.,	*Cambridge.*
Lincoln, John Clifford,	*Norton.*
MacConnell, James William,	*Boston.*
Marden, Orrison Swett, A.M. (*Boston Univ.*),	*Boston.*
McDonald, Rufus Cyrene,	*Brookline.*
Mitchell, John Singleton,	*Boston.*
Nash, George William, A.B.,	*Cambridge.*
O'Reiley, William Joseph, A.B. (*Boston Univ.*),	*Boston.*
Pfeiffer, Oscar Joseph, A.B. (*Dart. Coll.*),	*Portsmouth, N.H.*
Pigeon, James Cogswell Du Maresque, A.M. (*Coll. of N.J.*),	*Derry, N.H.*
Ripley, Frederick Jerome, A.B. (*Dart Coll.*),	*N. Easton.*
Ross, Charles Elliot Amsden,	*Saxonville.*
Scofield, Columbus Sewell,	*Wilbraham.*
Simpson, Charles Edward,	*Lowell.*
Smith, Howard Hutchins, PH.B. (*Wesleyan Univ.*),	*Middletown, Conn.*
Stetson, Hayward, A.B.,	*Bangor, Me.*
Stevens, William Stanford, A.B.,	*Boston.*
Stone, Eugene Potter,	*Boisé Barracks, Idaho.*
Symonds, Benjamin Ropes, Jr.,	*Salem.*
Taylor, Charles Warren,	*Lowell.*
Trumbull, Stephen, A.B. (*Yale Coll.*),	*Valparaiso, Chili.*
Tyler, Waldo Henry,	*Holliston.*
Warren, Charles Everett, A.B.,	*Boston.*
Webster, Charles Edward,	*Binghamton, N.Y.*
Wellington, Charles Berwick,	*Cambridge.*
Wood, Leonard,	*Pocassett.*

SUMMARY.

Graduates' Course	7
Fourth Class	9
Third Class	75
Second Class	86
First Class	64
Total	241

THE MEDICAL SCHOOL.

REQUISITES FOR ADMISSION.

All candidates for admission, excepting those who have passed an examination for admission to Harvard College, must present a degree in Letters or Science from a recognized college or scientific school, or pass an examination, on the Monday preceding the last Wednesday in June or September, at 10 A.M., in the following subjects: —

1. ENGLISH. Every candidate shall be required to write, legibly and correctly, an English composition of not less than two hundred words, and also to write English prose from dictation.

2. LATIN. The translation of easy Latin prose.

3. PHYSICS. A competent knowledge of Physics (such as may be obtained from Balfour Stewart's Elements of Physics).

4. ELECTIVE SUBJECT. Each candidate shall pass an approved examination in such one of the following branches as he may elect: French, German, the Elements of Algebra or of Plane Geometry, Botany.

The examinations will be conducted in writing, and specimens of the papers used will be sent on application to the Secretary. In judging the work of the candidate, the spelling, grammar, and construction will be considered.

Graduates in medicine will not be required to pass this examination on joining the school.

No student becomes a member of the school until he has registered his name with the Secretary of the Faculty.

DIVISION OF STUDIES.

FOUR YEARS' COURSE.

For the First Year. — Anatomy, Physiology, and General Chemistry.*

For the Second Year. — Practical and Topographical Anatomy, Medical Chemistry, Materia Medica, Pathological Anatomy, Clinical Medicine, Surgery, and Clinical Surgery.

* Any student who shall have previously passed in the Undergraduate department or Scientific School of Harvard University an examination in General Chemistry (including qualitative analysis) will be exempt from examination in this branch, and may pursue the study of Medical Chemistry during his first year. The latter privilege will be granted to students from other colleges and scientific schools who have received instruction in general chemistry equivalent in character and amount to that of the first year, on passing a satisfactory examination at the September examination, provided that satisfactory evidence of such previous study be sent to the Secretary of the Faculty one month before the date of this examination.

For the Third Year. — Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

For the Fourth Year. — Ophthalmology, Otology, Dermatology, Syphilis, Laryngology, Mental Diseases, Diseases of the Nervous System, Diseases of Women, Diseases of Children, Obstetrics, Clinical and Operative Obstetrics, Clinical Medicine, Clinical and Operative Surgery, Hygiene, Forensic Medicine.

THREE YEARS' COURSE.

For the First Year. — Anatomy, Physiology, and General Chemistry.*

For the Second Year. — Practical and Topographical Anatomy, Medical Chemistry, Materia Medica, Pathological Anatomy, Clinical Medicine, and Clinical Surgery.

For the Third Year. — Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, Clinical Surgery, Ophthalmology, Dermatology, Syphilis, Otology, Laryngology, Mental Diseases, Diseases of the Nervous System, Diseases of Women, Diseases of Children, Hygiene, Forensic Medicine.

METHODS OF INSTRUCTION.

The following methods of instruction are adopted in the several departments : —

Anatomy. — Lectures; various practical exercises, including abundant dissection, under the direction of the Demonstrator; recitations from text-books; histology.

Physiology. — Lectures, recitations, conferences, and practical demonstrations in the Laboratory. To students of the second, third, and fourth classes, opportunities are given for original investigations in the Laboratory.

Chemistry is taught mainly by practical work in the Laboratory, the student having his own desk and apparatus. General Chemistry and qualitative analysis are taught during the first year. Besides the laboratory-work, there is a lecture and a recitation every week. In the second year, medical chemistry is taught by lectures, recitations, and exercises in the Laboratory.

Pathological Anatomy is taught by lectures, recitations, and practical instruction in pathological histology. The collection of the Warren Anatomical Museum is used to illustrate the lectures; and many morbid specimens are shown in a fresh state. Students also receive practical instruction in the method of making autopsies, and are admitted to those made at both hospitals. Special classes in pathological histology, including the diagnosis of tumors, are formed for those who are provided

* See note, p. 161.

with a microscope. Such students are required to prepare the various objects. The school possesses a number of microscopes for the use of those students whose means will not permit the purchase of an instrument.

Materia Medica and Therapeutics. — Materia Medica is taught by lectures and practical demonstrations. Therapeutics, or the physiological action of drugs and their application to disease, is taught in the third year, by lectures, recitations, and hospital exercises.

The Theory and Practice of Medicine. — Lectures, recitations, and hospital visits.

Clinical Medicine. — Daily instruction is given in this department by hospital visits and other exercises. Students are furnished with cases for personal examination, and are called upon to report them before the class, where they are criticised. These examinations are held both in the wards and in the amphitheatre. Another exercise, known as the "Clinical Conference," affords an opportunity for more thorough preparation of cases, more time being allowed for their study. The full written report of a case is read by the student who has examined it. It is afterwards criticised by the class, by the Professor of Clinical Medicine, and other teachers in the school. In addition to this, a regular course of supplementary instruction is given in Auscultation and Percussion, and in Laryngoscopy, which affords students an abundant opportunity for acquiring a thoroughly practical knowledge of these methods of exploration.

Surgery. — Lectures and recitations. There are also courses on Surgical Anatomy, Minor Surgery, Surgical Histology, Bandaging, and Operative Surgery. In the latter, students of the third and fourth classes are supplied with material for repeating the usual surgical operations.

Instruction in Clinical Surgery is given at the Massachusetts General Hospital and City Hospital, throughout the year, as follows: —

First Half-Year. — Clinical Lectures on cases, per week, 2; Surgical Visits in the hospital wards, per week, 2; public operating days, per week, 2. Total number of exercises per week, 6.

Second Half-Year. — Clinical Lectures on cases, per week, 1; Surgical Visits in the hospital wards, per week, 3; public operating days, per week 3. Total number of exercises per week, 7.

The Professor of Clinical Surgery holds an exercise twice a week, in winter, at the City Hospital. On one day, a clinical lecture is given over surgical cases brought into the operating theatre, illustrated by explorations and operations. On the other day, a bedside clinic is held in the wards. A third exercise is held each week in winter, in the form of a surgical conference, at which third and fourth year students make a full written report of a surgical case, which is then criticised by their

fellow-students and by the Professor. Every candidate for a degree is required to report a clinical case in surgery.

Obstetrics. — Lectures and recitations. Students are instructed in the usual operations on the manikin, and will have opportunities to take charge of cases of obstetrics in their third year. A course of operative obstetrics, with practical illustrations on the cadaver, is given.

Diseases of Women and Children. — Lectures and Clinical Instruction.

Ophthalmology. — A complete course is delivered upon the diseases of the eye, including clinical instruction and the use of the ophthalmoscope.

Dermatology is taught by lectures and clinical illustrations. The special out-patient department at the Massachusetts General Hospital furnishes ample opportunities for illustration.

Syphilis. — Recitations and clinical instruction.

Otology. — Lectures and clinical instruction.

Laryngology. — Lectures and Demonstrations.

Diseases of the Nervous System. — Lectures and Demonstrations.

Hygiene. — .

Forensic Medicine. — Lectures.

Embryology. — Lectures.

TEXT-BOOKS.

The following works are recommended as text-books, and for collateral reading and consultation : —

Text-Books.	*Collateral Reading.*
Anatomy.	
Gray, Wilson, Leidy, Turner.	Quain (edition of 1876).
Hodges's Practical Dissections.	Holden's Osteology.
Holden's Manual.	Stricker's Manual of Histology.
Holden's Landmarks.	Frey's Histology.
	Frey's Microscopic Technology.
	Tyson's Cell Doctrine.
	Klein's Atlas of Histology.
Physiology.	
Dalton's Human Physiology.	Pavy on Food and Dietetics.
Foster's Text-book of Physiology.	Fick, Compendium der Physiologie.
Huxley's Elementary Lessons in Physiology.	Fick, Medicinische Physik.
	Sanderson's Hand-book for the Physiological Laboratory.
	Flint's Physiology of Man.
	Carpenter's Principles of Human Physiology.

General Chemistry.

Bloxam's Chemistry, Inorganic and Organic.
Clowes's Elementary Treatise on Practical and Qualitative Inorganic Analysis.
Roscoe and Schorlemmer's Treatise on Chemistry.

Medical Chemistry.

Neubauer and Vogel, Analysis of the Urine.
Tyson's Guide to the Practical Examination of the Urine.
Reese's Manual of Toxicology.
Kingzett, Animal Chemistry.
Gorup - Besanez, Physiologische Chemie.
Taylor on Poisons.
Tardieu, Étude médico-légale et clinique sur l'Empoisonnement.

Materia Medica.

National Dispensatory, Stillé and Maisch.
United States Dispensatory.
Flückiger and Hambury's Pharmakographia.

Pathological Anatomy.

Wagner's Manual of General Pathology.
Orth's Compend of Diagnosis in Pathological Anatomy.
Cornil and Ranvier's Pathological Histology.
Jones and Sieveking's Pathological Anatomy (Payne's edition).
Wilks's Pathological Anatomy (Moxon's edition).

Therapeutics.

H. C. Wood's Therapeutics.
Mann's Prescription Writing.
Chamber's Manual of Diet.
Stillé's Therapeutics and Materia Medica.
Bartholow's Materia Medica and Therapeutics.
Ringer's Therapeutics.

Obstetrics.

Playfair's system of Midwifery.
Schroeder's Manual of Midwifery.
Cazeaux's Midwifery.
Winckel's Diseases of Childbed.
Barker's Puerperal Diseases.
Barnes's Obstetric Operations.

Theory and Practice.

Niemeyer's Text-book of Practical Medicine.

Roberts's Hand-book of Theory and Practice of Medicine.

Jaccoud, Traité de Pathologie Interne.

Bennett's Clinical Lectures on the Principles and Practice of Medicine.

Bristowe's Theory and Practice of Medicine

Flint's Clinical Medicine.

Flint's Practice of Medicine.

Surgery.

Bryant's Practice of Surgery.

Billroth's Surgical Pathology.

Heath's Minor Surgery and Bandaging.

Guérin, Éléments de Chirurgie Opératoire.

Holmes's System of Surgery.

Cooper's Surgical Dictionary (1872).

Holden's Landmarks, Medical and Surgical.

Braune's Atlas of Topographical Anatomy, translated by Bellamy.

The following tabular views will illustrate the distribution of studies throughout the year.

FIRST HALF-YEAR, 1880-81, FROM SEPTEMBER 30, TO FEBRUARY 14.

FIRST CLASS.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Histology after Jan. 15.	Laboratories.	Laboratories.	Histology after Jan. 15.	Laboratories.	Laboratories.
10		Chemistry, L. or R. 1st 10 weeks.	Laboratories.		Chemistry, R.	Physiology, R.
11	Physiology, L.	Physiology, L.	Chemistry, L.	Laboratories.	Physiology, L.	
12	Histology till Jan. 15.	Laboratories.	Laboratories.	Histology till Jan. 15.	Laboratories.	Museum.
1	Anatomy, L.	Anatomy, L.		Anatomy, L.	Anatomy, R.	
5	Prac. Anat. after Jan. 1.	Prac. Anat. after Jan. 1.	Prac. Anat. after Jan. 1.	Prac. Anat. after Jan. 1.	Prac. Anat. after Jan. 1.	

SECOND CLASS.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	M. G. H. Med Visit. *Laryngoscopy.	B. C. H. Med. Vis., Bos. Dis. *Laryngoscopy.	Clin. Med. L. *Laryngoscopy.	M. G. H. Med. Visit. * Laryngoscopy.	Bost. Disp. *Laryngoscopy.	*Laryngoscopy.
10	Path. Anat. L.	Clin. Surg. L after Dec. 1.		Chemistry, L.	B. C. H. Surg. Visit.	M. G. H. Surg. Visit.
11	Clin. Surgery, L. * Auscultat'n.	* Auscultat'n.	* Auscultat'n.	* Auscultat'n.	B. C. H. Operations. * Auscultat'n.	M. G. H. Operations. * Auscultat'n.
12				Mat. Med.	Chemistry, R.	Museum.
1			Top. Anat.			
3	Path. Histology.	Path. Anat. R.	Path. Anat. L.	Path. Hist.	Path. Anat. R.	
4		Surgery, R.			Clinical Conf.	
5	Prac. Anat. till Jan. 1.	Prac. Anat. till Jan. 1.	Prac. Anat. till Jan. 1.	Prac. Anat. till Jan. 1.	Prac. Anat. till Jan. 1.	

* In Sections.

THIRD CLASS.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	M. G. H. Med. Visit., Ophth., E. & E. Inf.	B. C. H. Med. Visit., Boston Disp.	Clin. Medicine, L.	M G. H. Med. Visit., Ophth., E. & E. Inf.	B C. H. Ophthal. and Otology, Boston Disp.	Diseases of Nervous System.
10	Theo. & Prac. L.	Clin. Surg. L. after Dec. 1.	Dermatol. Clin.	Theo. & Prac. L.	B. C. H. Surg. Visit.	M G. H. Surg. Visit.
11	Clin. Surgery, L.	Dis. of Nerv. System.	Surgery, L.	Surgery, L.	B. C. H. Op., Diseases of Children.	M. G. H. Operations.
12		Till Dec. Surgery, L. In Jan. Hygiene, L.		Obstetrics, L.	Syphilis.	Museum.
2	Gynaecology, L.					
3	Obstetrics, L.	Theo. & Prac R.	Obstetrics, R.	Ophthal., Gynaecology, Free Hospital.	Theo. and Prac. R.	
4	Therapeutics, L.	Dermatology, L.	Therapeutics, R.	Therapeutics, L.	Clinical Conf.	

FOURTH CLASS.*

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Ophthal. C & D, B. C. H. Oct. Nov. Dec. Otology. C & D, E. and E. Inf. Dec. Jan. Feb.	Clin. Medicine.	Ophthal. C & D, B. C. H. Oct. Nov. Dec., Otology. C & D, E. and E. Inf. Dec. Jan. Feb.		Clinical Medicine. Ophthalmol. Otology.	Clin. Medicine.
10	Dis. of Chil. A & B, Dispensary.	Dermatol. A & B.	Dermatol. A & B.	Diseases of Children. A & B, Dispensary.	Dermatology, A & B.	Dis. of Children, A & B, Dispensary.
11	Syphilis, A.	Dis. of Nerv. Sys. C & D, B. C. H.	Syphilis, B. Gynaecol. C, Dispensary.	Dis. of Nerv. Sys. C & D, B. C. H.	Dis of Nerv. Sys. C & D, B. C. H.	Gynaecology. C & D, Dispensary.
12				Obstetrics, L.		
2	Gynaecology.					
3		Gynaecology. C & D, Free Hospital.		Opthal L. Gynaecology, C & D, Free Hospital.	Forensic Med. C & D.	
4		Dermatology.				

* Divided into Sections A, B, C, D.
Due notice will be given of the operative courses in Surgery and Obstetrics.

SECOND HALF-YEAR, 1879-80, FROM FEBRUARY 9, TO JUNE 30.

FIRST CLASS.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Histology till April.	Laboratory.	Laboratory.	Histology till April.	Laboratory.	Laboratory.
10		Chemistry, L.	Physiology, Con.		Chemistry, R.	Physiology, R.
11	Laboratory.	Physiology, L.	Laboratory.	Laboratory.	Physiology, L.	Laboratory.
12	Histology, in April.	Laboratory.	Laboratory.	Histology, in April.	Laboratory.	Museum.
1	Anatomy, L. till April.	Anatomy, L. till May.	Laboratory.	Anatomy, L. till May.	Anatomy, R. till May.	
3	Laboratory.	Laboratory.	Laboratory.	Laboratory.	Laboratory.	
5	Prac. Anat. till May.	Prac. Anat. till May.	Prac. Anat. till May.	Prac. Anat. till May.	Prac. Anat. till May.	

SECOND CLASS.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	M. G. H. Med. Vis.	B. C. H. Med. Visit. Bost. Dispen.	Bandaging.	M. G H. Med. Visit.	B. C. H. Bost. Disp.	Clin. Medicine.
10	Clin. Medicine.	B. C. H. Clin. Surg. till April 1. After April 1, Med. Clin.		Materia Medica.	B C H. Surg. Visit.	M. G. H. Surg Visit.
11	Path. Anat. L.		Chemistry, R.		B. C. H. Operations.	M. G. H. Operations.
12	Reg. Anat. after April 1. for 3 weeks.	Chemistry, L.	Reg. Anat. after April 1. for 3 weeks.	M. G. H. Surg. Conf.		Museum.
3	Path. Histology.	Path. Anat. R.	Path. Anat. L.	Path. Hist.	Path. Anat. R.	
4		Surgery, R.			Clinical Conf.	

THIRD CLASS.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	M. G. H. Med. Visit. E. and E. Inf Laryngoscopy.	B. C. H. Med. Visit. Boston Disp. Laryngoscopy.	Clin. Gynaecology. Laryngoscopy.	M. G. H. Med. Visit. Dis. of Nerv. Sys. Laryngoscopy.	B. C. H. Ophthal. Clin. Otology. E. & E. Inf. Laryngoscopy.	Clinical Med. Gynaecology, Clin. Laryngoscopy.
10	Clin. Medicine.	B. C. H. Clin. Surg. till April 1. After April 1, Med. Clin.	Clin. Dermatol.	Opthalmology.	B. C. H. Surg. Visit. Boston Disp.	M. G. H. Surg. Visit.
11	Theo. and Prac. L		Mental Dis. after April recess.	Theo. and Prac. L.	B. C. H. Op. Dis. of Chil. Syphilis.	M. G. H. Op.
12	Surg. Conf. till April 1.	Med. Clinic, till April.	Diseases of Children.	Forensic Med.		Museum.
3	Obstetrics, L.	Theo. and Prac. R.	Obstetrics, R.	Obstetrics, R.	Theo. and Prac R.	
4	Therapeutics, L.*	*Dermatol.	Therapeutics, *R.	Therapeutics, *R	Clinical Conf.*	

* The course in Operative Surgery, for third year students, will be given after that in Regional Anatomy, and exercises conflicting with the former course will be omitted during its continuance.

The course in Operative Obstetrics takes place from 2 till 4 P.M. during two weeks in April.

Due notice will be given of the course in Operative Gynaecology.

INSTRUCTION FOR 1880–81 TO STUDENTS OF THE THREE YEARS' COURSE.

ANATOMY.

Descriptive Anatomy. *Four times a week till May.* Professor Holmes.

Practical Anatomy, with Exercises in Dissection. *Fifteen times a week from November till May.* Drs. Beach, Waterman, and Richardson.

Topographical Anatomy. *Once a week.* Dr. Dwight.

Laboratory Exercises in Histology. *Twice a week till May.* Drs. Dwight and Quincy.

Embryology. Dr. C. S. Minot.

PHYSIOLOGY.

Systematic and Experimental Physiology. *Four times a week.* Professor Bowditch.

Laboratory Exercises in Experimental Physiology. *Twice a week for five weeks.* Dr. Garland.

CHEMISTRY.

General and Analytical Chemistry. *Twice a week, with an additional weekly exercise during the first ten weeks.* Dr. Hills.

Medical and Toxicological Chemistry. *Twice a week.* Professor Wood. Practical Exercises in the Laboratory for General Chemistry. *Daily.* Dr. Hills.

Practical Exercises in the Laboratory for Medical Chemistry. *Daily.* Professor Wood.

MATERIA MEDICA AND THERAPEUTICS.

Materia Medica, with Practical Demonstrations. *Once a week.* Dr. Bolles.

Therapeutics. *Three times a week.* Professor Edes.

PATHOLOGY AND PATHOLOGICAL ANATOMY.

General Pathology and Pathological Anatomy. *Twice a week.* Professor Fitz.

Special Pathological Anatomy, with Demonstrations. *Twice a week.* Professor Fitz.

Laboratory Exercises in Pathological Histology. *Twice a week till April.* Drs. Cutler and Whitney.

Practical Instruction in Performing Autopsies. *Throughout the year.* Professor Fitz and Dr. Cutler.

SURGERY.

Surgery and Clinical Surgery. *Twice a week till March.* Professor Bigelow.

Clinical Surgery. *Twice a week till April.* Professor Cheever.

Clinical Surgery. *Once a week during the second half-year.* Dr. Porter.

Operative Surgery. *Fifteen practical exercises.* Dr. Porter.

Recitations in Surgical Pathology. *Once a week during the first half-year.* Dr. Warren.

Recitations in Surgery. *Once a week during the second half-year.* Dr. Warren.

Laboratory Exercises in Surgical Histology. *Twice a week after March.* Drs. Warren and Bigelow.

The Application of Bandages and Apparatus. *Once a week during the second half-year.* Dr. Warren.

Surgical visits are made at the Massachusetts General Hospital by Professor Bigelow and Drs. Hodges, Porter, Warren, and Beach. — At the City Hospital, by Professor Cheever and Drs. Homans, Thorndike, Ingalls, Fifield, and Gay. — The Surgical Cases at the Eye and Ear Infirmary and at the Boston Dispensary are shown by the surgeons in charge.

OPHTHALMOLOGY.

Diseases of the Eye. *Once a week.* Professor Williams.

Clinical Ophthalmology. *Once a week till January, and after March.* Professor Williams.

DERMATOLOGY.

Diseases of the Skin. *Once a week.* Professor White.

Clinical Dermatology. *Once a week.* Professor White.

SYPHILIS.

Practical Diagnosis and Treatment of Syphilis. *Once a week during the first half-year.* Dr. Greenough.

Practical Diagnosis and Treatment of Syphilis. *Once a week during the second half-year.* Dr. Wigglesworth.

OTOLOGY.

Practical Diagnosis and Treatment of Diseases of the Ear. *Once a week from January till April.* Dr. Green.

Anatomy, Physiology, and Diseases of the Ear. *Twice a week for three months.* Dr. Blake.

SPECIAL PATHOLOGY AND THERAPEUTICS.

Theory and Practice of Physic. *Five times a week.* Professor Minot.

Clinical Medicine. *Three times a week, with an additional weekly exercise during the first half-year.* Professor Ellis.

Practical Instruction in Auscultation and Percussion. *Six times a week during the first half-year.* Drs. Whittier, Mason, and Shattuck.

Practical Diagnosis and Treatment of Diseases of the Larynx. *Six times a week, first half-year.* Dr. Knight.

Diseases of Women. *Twice a week.* Dr. Baker.

Practical Diagnosis and Treatment of Diseases of Children. *Once a week, first half-year.* Dr. Oliver.

Practical Diagnosis and Treatment of Diseases of Children. *Once a week, second half-year.* Dr. Rotch.

Practical Diagnosis and Treatment of Diseases of the Nervous System. *Once a week till February.* Dr. Webber.

Practical Diagnosis and Treatment of Diseases of the Nervous System. *Once a week.* Dr. J. J. Putnam.

Mental Diseases. *Eight lectures.* Dr. Folsom.

Hygiene. *Eight lectures.*

Forensic Medicine, with Demonstrations. *Twelve exercises.* Dr. Draper.

Medical visits are made at the Massachusetts General Hospital by Professors Ellis and Minot and by Drs. Shattuck, Abbot, Shaw, and Tarbell. — At the City Hospital, by Professor Edes and Drs. Blake, Lyman, Stedman, Arnold, Curtis, Draper, Doe, and Mason. — At the Danvers Asylum for the Insane. — The Medical Cases at the Boston Dispensary are shown by the physicians in charge.

OBSTETRICS.

Theory and Practice of Obstetrics. *Twice a week.* Professor Reynolds.

Recitations in the Theory and Practice of Obstetrics. *Once a week.* Dr Richardson.

Operative Obstetrics. *Twelve practical exercises.* Dr. Richardson.

Practical Instruction in Clinical Obstetrics. *Throughout the year.* Dr. Richardson.

CLINICAL ADVANTAGES.

The Medical Department of the University is established in Boston, in order to secure those advantages for Clinical Instruction and for the study of Practical Anatomy which are found only in large cities.

There are Hospital visits or operations daily.

The Massachusetts General Hospital. — During the past year, 1,971 patients were treated in the wards, and 18,960 in the out-patient departments. Patients are received from all parts of the United States and the Provinces, and are visited by the students with the attending physicians and surgeons. The opportunities for becoming acquainted with general surgery are very great. Operations are numerous, and are performed in the amphitheatre, which is provided with seats for 400 persons. Clinics in the following special branches have been established in connection with the out-patient department: Dermatology, Laryngology, Diseases of the Nervous System.

The Hospital is adjacent to the Medical College, and its wards are open to the students on four days in the week.

The City Hospital. — During the past year, 4,631 cases were treated in its wards, and 10,419 in its various out-patient departments. The Medical wards always contain many cases of acute diseases, and changes are taking place constantly. The opportunities for seeing fractures, injuries, and traumatic cases of all kinds are excellent, since, on an average, 800 street accidents are yearly treated. Surgical operations are performed in the amphitheatre. These include general surgical and also ophthalmic operations. Diseases of the eye, the ear, and the skin are largely treated in the out-patient department. Clinical instruction is given by the physicians and surgeons twice a week.

In these two hospitals, the facilities for witnessing Operative Surgery are unsurpassed. Twice a week in the first half-year, and three times a week in the second half-year, operations are performed in the presence of the class. The number of these operations is large, reaching nearly two thousand a year. The variety is great, embracing every surgical disease and injury, including the surgical operations on the eye and ear.

The Massachusetts Charitable Eye and Ear Infirmary. — The nine thousand patients annually treated at this institution present every variety of disease of the ear and eye, and supply a large number of operations.

The Marine Hospital at Chelsea receives from the shipping of the port a large number of patients, who furnish examples of the diseases of foreign countries, and of distant parts of the United States. Many cases of venereal disease, in its various forms, are treated annually.

The Boston Dispensary. — Thirty-four thousand six hundred and eighty-four patients were treated at this Public Charity during the past year. Students have excellent opportunities to see minor surgery, and many of the diseases of children, and to practise auscultation.

Hospital Appointments. — Twenty or more students are selected annually for House Officers of the various Hospitals. Appointments to the Boston Lying-in Hospital are for a term of four months.

EXAMINATIONS.

The regular examinations are held in the following order: —

At the end of the first year. — Anatomy, Physiology, and General Chemistry.*

End of second year. — Topographical Anatomy, Medical Chemistry, Materia Medica, and Pathological Anatomy.

End of third year. — Therapeutics, Obstetrics, Theory and Practice of Medicine, Surgery.

End of fourth year. — Ophthalmology, Otology, Dermatology, Syphilis, Laryngology, Mental Diseases, Diseases of the Nervous System, Diseases of Women, Diseases of Children, Obstetrics, Clinical and Operative Obstetrics, Clinical Medicine, Clinical and Operative Surgery, Hygiene, Forensic Medicine.

The examinations of the first two years are common to both groups of students. The final examinations at the close of the third year are in the following subjects: Therapeutics, Obstetrics, Surgery and Clinical Surgery, Theory and Practice, Clinical Medicine.

The regular examinations are held at the end of each year in June; and a week before the opening of the School in September, on the studies of the preceding year.†

No student shall be allowed to anticipate the examinations in the regular course of studies of his year, except by special permission of the Faculty. No student shall be allowed to present himself for examination in any branch, without notifying the Dean, by letter, that he intends to do so, one month before the time when the examination is to be held.

The examinations are conducted mainly in writing. No student will receive his degree until he has passed a satisfactory examination in all the subjects of the three years' course, and presented a certificate from the Demonstrator of Anatomy that he has satisfactorily dissected the three parts of the body. Those who fail in any subject may present themselves in that subject again, at the next regular examination. The regular examinations for the year 1880–81 will begin June 13 and September 26.

* See foot-note on page 161.

† The June examination is for those only who are members of the School at the time, and for those entitled to apply for the degree.

The following is the order of the examinations held in June: —

June 13. — Monday, Surgery and Clinical Surgery; Tuesday, Theory and Practice; Wednesday, Clinical Medicine; Thursday, Therapeutics; Friday, Obstetrics; Saturday, Pathological Anatomy; Monday, 20th, Medical Chemistry; Tuesday, Materia Medica; Wednesday, Anatomy; Thursday, General Chemistry; Saturday, Physiology.

The examinations for admission are held at the Medical School, in June and September, on the Monday preceding the last Wednesday in those months, at 10 A.M.

DIVISION OF STUDENTS.

Students are divided into four classes, according to their time of study and proficiency, and during their last year will receive largely increased opportunities of instruction in the special branches mentioned. Students following the three years' course are classified as heretofore, and the instruction in the special branches is of the same character as that which has been given for several years. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for admission to the advanced classes must pass an examination in the branches already pursued by the class to which they seek admission, and furnish a satisfactory * certificate of time spent in medical studies. No student shall advance with his class, or be admitted to advanced standing, until he has passed the required examination in the studies of the previous year, or a majority of them; nor shall he become a member of the third class until he has passed all the examinations of the first, in addition to a majority of those of the second year.

Students who do not intend to offer themselves for a degree will, however, be received for any portion of the course.

Any student may obtain, without an examination, a certificate of his period of connection with the School.

REQUIREMENTS FOR A DEGREE.

Every candidate must be twenty-one years of age, and of good moral character; must give evidence of having studied medicine three or four full years; have spent at least one continuous year at this School; have presented a satisfactory thesis; and have passed the required examinations.

The course of study recommended by the Faculty covers four years; but, until further notice, the degree of Doctor of Medicine will continue to be given upon the completion of three years of study, to be as ample and full as heretofore, to candidates who have passed satisfactorily the examinations hitherto required.

* Certificates from teachers who practise any peculiar or exclusive system of medicine are not accepted.

The degree of Doctor of Medicine *cum laude* will be given to candidates who have pursued a complete four years' course, and obtained an average of seventy-five per cent upon all the examinations above stated. In addition to the ordinary degree of Doctor of Medicine, as heretofore obtained, a certificate of attendance on the studies of the fourth year will be given to such students desiring it as shall have attended the course, and have passed a satisfactory examination in the studies of the same.

Theses of conspicuous merit are mentioned with honor, or read at the University Commencement.

The degree of Master of Arts is open to graduates of the School who are also Bachelors of Arts of Harvard College, and to Bachelors of Arts of other colleges who shall be recommended by the Faculty of Harvard College. Candidates must pursue an approved course of study in Medicine for at least one year after taking the degree of Doctor of Medicine.

LIBRARIES.

The library at the Medical College is open to the student, on the deposit of five dollars, to be refunded to him when he may desire, after returning all books.

The College Library at Cambridge is open to the students of the Medical School.

The Boston Public Library, which contains a large collection of medical books, may also be used by students recommended by the Dean.*

BOYLSTON MEDICAL SOCIETY.

This Society, composed of medical students, meets at stated intervals for the discussion of medical topics, and is presided over by a physician selected by the members. Prizes, in money or books, are awarded annually to the writers of essays judged worthy of such distinction by a committee of physicians selected for that purpose by the Society.

FEES AND EXPENSES.

For matriculation, five dollars; for a year, two hundred dollars (if in two payments, at the first, one hundred and twenty dollars; at the second eighty dollars); for a half-year alone, one hundred and twenty dollars; for graduation, thirty dollars. Of students who do not pay in advance, a bond for $300, executed by two sufficient bondsmen, one of whom must be a citizen of Massachusetts, is required. A copy of such bond will be sent, on application to the Secretary of the Faculty. To students depositing these bonds, term-bills will be presented at the end of the first term, to be paid within two weeks; and also one week or more before Com-

* Only those are recommended who have deposited with the Treasurer a bond or the sum of fifty dollars.

mencement, to be paid on or before the beginning of the next academic year. Such students shall be held responsible for the payment of fees until they shall have notified the Dean of their intention to withdraw from the School, and have subsequently received their bond from the Treasurer. No degree can be conferred till all dues to the School are discharged. The student's general expenses may be reduced, in accordance with his means, to the standard which prevails in other cities. The janitor of the Medical College will always have a list of boarding-houses in the vicinity of the College building, varying in their rates of charges from five to ten dollars a week.

PECUNIARY AID.

Four yearly scholarships have been established, of the value of $200 each, open to meritorious students who have been at the School for one or two years. Only those needing assistance are expected to apply; and from such those holding the highest rank will have the preference.

Two assistants in the Chemical Laboratory are appointed annually from such deserving students as need aid. Students holding this position are exempt from the payment of the fee for tuition during their term of service.

COURSE OF STUDY FOR GRADUATES.

For the purpose of affording to those who are already graduates in medicine additional facilities for pursuing clinical, laboratory, and other studies, for which they had not previously found leisure, in such subjects as may especially interest them, and as a substitute in part for the opportunities heretofore sought for in Europe, the Faculty have established a post-graduate course, of which the following is a programme. The fee in each branch is for a single half-year.

Histology. — The various methods of examining the different tissues are employed, and opportunities for original research are offered. Fee, twenty dollars.

Physiology. — Opportunities for original investigation in the Physiological Laboratory. Fee, thirty dollars.

Medical Chemistry. — Practical instruction in the Chemical Laboratory, in the analysis of the urine and other animal fluids in health and disease, and of poisons; examination of blood-stains and other objects connected with medico-legal investigations, with the application of the microscope to these processes. General analysis, also, if desired. Laboratory-fee, thirty dollars.

Pathological Anatomy. — Practical instruction in Pathological Histology and the examination of specimens in the Microscopical Laboratory; and opportunity for witnessing and making autopsies. Fee, twenty dollars.

Surgery. — A practical course of operative surgery, and instruction in the application of bandages and apparatus. Fee, twenty-five dollars.

Laryngology is practically taught, and diseases of the larynx demonstrated by the aid of the oxyhydrogen light. Fee, twenty dollars.

Ophthalmology. — Clinical instruction, lectures on diseases of the eye, and demonstrations of the methods of performing operations. Exercises in the use of the ophthalmoscope. Fee, twenty-five dollars.

Otology. — Lectures and clinical instruction in diseases of the ear. Fee, fifteen dollars.

Dermatology. — Clinical instruction in diseases of the skin, illustrated by patients in this department of the Massachusetts General Hospital. Lectures. Fee, twenty-five dollars.

Syphilis. — Clinical instruction at the Boston Dispensary, and at the City Hospital (second half-year). Fee, fifteen dollars.

Diseases of the Nervous System. — Practical illustrations of the application of various forms of electricity. Lectures. Fee, fifteen dollars.

Gynaecology. — Clinical instruction in diseases of women. Fee, ten dollars.

Obstetrics. — Cases supplied, and clinical instruction given. A course of operative obstetrics. Fee, twenty dollars.

Those pursuing this course may elect the studies to which they will give their attention, and allot the time they will devote to each. They will be exempt, unless at their option, from examinations, and may obtain a certificate of attendance on this course of advanced study. On payment of the full fee for the course, they will have the privilege of attending any of the other exercises of the Medical School, the use of its laboratories and library, and all other rights accorded by the University.

Graduates of other medical schools may obtain the degree of M.D. at this University, after a year's study in the graduates' course. The required examinations may be passed in such order as is desired, but only at the stated seasons.

The fee for a year is	$200
" for a half-year	120

For any of the special courses, such fees as are above specified.

For further information or catalogues, address DR. R. H. FITZ, *Secretary*, 18 Arlington Street, Boston, Mass.

☞ The Medical College is in North Grove Street, Boston.

EXAMINATION PAPERS.

(*June Examination*, 1880.)

First Year's Studies.

ANATOMY — Professor Holmes.

Describe: —

1. Connective tissue corpuscles.
2. Endothelium.
3. The coats of an artery.
4. The sacrum.
5. The bones of the tarsus.
6. The ankle joint.
7. The peroneal muscles.
8. The intercostal muscles.
9. The radial artery.
10. The internal mammary artery.
11. The brachio-cephalic veins.
12. The lymphatic system.
13. The spleen.
14. The trachea.
15. The cartilages of the larynx.
16. The hard and soft palate.
17. The salivary glands.
18. The medulla oblongata.
19. The phrenic nerve.
20. The dental nerves.

PHYSIOLOGY. — Professor Bowditch.

1. Define "potential energy," and illustrate by physiological examples.

2. How is the weight of the lower jaw supported when the mouth is closed and at rest?

3. What is the difference between the parotid and submaxillary saliva?

4. What is the nutritive value of alcohol?

5. Why does an animal with a permanent biliary fistula require an extra supply of food?

6. Describe the absorption of fat, and illustrate by a diagram of an intestinal villus.

7. How may coagulation of the blood be produced in the living body?

8. How and why does the specific gravity of the blood obtained at the beginning of a prolonged hemorrhage differ from that obtained at the end?

9. What is the function of the auricles of the heart?

10. Explain the action of the vaso-motor nerves.

11. How is the danger of obstruction to the circulation by compression of the veins guarded against?

12. What relation is there between the nerve-supply of muscles and their power of delicate adjustment?

13. How may a post-mortem rise of temperature be accounted for?

14. What evidence is there that the lungs contain smooth muscular fibres?

15. How is the feeling of the presence of an amputated limb to be explained?

16. How does repose, both physical and mental, favor digestion?

17. Why does the pupil of the eye appear dark?

18. What is the function of the semicircular canals of the ear?

19. What tissues waste most rapidly and completely in starvation?

20. How is the pleuro-peritoneal cavity formed in the embryo?

GENERAL CHEMISTRY. — Instructor Hills.

[In addition to the following questions, a written report of the analysis of a solution containing inorganic substances was required.]

1. Relation between vapor density, and molecular weight? Specific heat and atomic weight? Weight in grams of one liter of oxygen? One liter of carbon dioxide? One example each of elements whose molecules consist of one, two, three, and four atoms.

2. How many liters of hydrogen can be made from 32.6 grams of zinc? How many cubic centimeters of H_2SO_4 (Sp. gr. 1.843) are required?

3. Write the reactions by which oxygen, carbon dioxide, hydrogen sulphide, and nitric acid are usually made. Properties of phosphorus. Important uses of sulphur and sulphuric acid.

4. Formula, color, and solubility in water of saleratus, nitre, epsom-salts, ferrous sulphate, potassic ferrocyanide, chrome yellow, lunar caustic, calomel, corrosive sublimate, vermillion.

5. Properties, physical and chemical, of copper, including the action of articles used in cooking upon copper utensils. Composition of any three alloys containing copper.

6. Composition of coal gas. What injurious action have carbon dioxide and sulphur compounds when present in coal gas? How are they removed? Name the important bye-products obtained in the manufacture of coal gas.

7. Define clearly deodorizers, disinfectants, and antiseptics. To which class do each of the following substances belong: charcoal, chloride of lime, sulphur dioxide, ferrous sulphate, carbolic acid?

8. Explain the action of each of the substances mentioned in the preceding question, and state the conditions under which each is best used.

9. To what class of organic compounds does glycerine belong? In what substances is it found, and in what form does it exist in these substances? State, briefly, two methods for extracting glycerine. What is formed when the glycerine is set free?

10. Principal tests for salts of manganese, lead, and copper? For sulphuric and oxalic acids?

11 & 12. Write the analysis of the Barium Group (all the members being present), explaining clearly the reasons for each step in the process.

O = 16, C = 12, S = 32, Zn = 65.2. One liter of hydrogen = 0.0896 grams.

Second Year's Studies.

MEDICAL CHEMISTRY. — Professor Wood.

[In addition to the following questions, a written report of the analysis of a specimen of urine was required.]

1. Under what conditions may a large amount of urine with a low Sp. Gr. be passed?

2. Under what conditions is the amount of chlorine in the urine absolutely diminished? Give the method for estimating the amount of chlorine.

3. In what renal diseases do we find a relatively large amount of albumen? a small amount?

4. Character of the urine and sediment in a case of active hyperaemia of the kidney?

5. Character of the urine and sediment in chyluria? How distinguish chylous urine from urine to which milk has been added?

6. What inferences can be drawn from urine having the following character? why?

(*a*) High. Acid. Sp. Gr. = 1030. Consid. sediment.

Uph. = +. $\overset{+}{U}$. = m. +. Cl. = —. E. P. = n.

Ind. = m. +. $\overline{U}$. = m. +. Sf = n. A. P. = —.

Albumen = 1.85%.

Bile and sugar absent.

Sediment = numerous hyaline, granular, and fatty casts, few epithelial casts, and fatty renal epithelium.

Total amount of urine = 470 cubic cent.
" " " urea = 17.625 grm.
" " " P_2O_5 = 0.564 "
" " albumen = 8.695 "
" " Cl. = 0.598 "

(*b*) Pale. Acid Sp. Gr. = 1012. Slight sediment.

Uph. = m. —. $\overset{+}{U}$. = —. Cl. = —. E. P. = —.
Ind. = n. $\overline{U}$. = —. Sf. = n. A. P. = sl. —.
Albumen = $\frac{1}{7}$%.
Bile and sugar absent.
Sediment = hyaline, granular and so-called waxy casts.
Total amount of urine = 3450 cubic cent.
" " " urea = 35.983 grm.
" " " Cl. = 10.462 "
" " " P_2O_5 = 2.242 "
" " albumen = 4.658 "

7. What are the secondary constituents of calculi? How detect them? What is the cause of their deposition?

8. Nitric acid poisoning. Sources, symptoms, appearances.

9. Properties of hydrocyanic acid? Points of difference between hydrocyanic acid and opium poisoning?

10. Give every method of distinguishing between corrosive sublimate and calomel. How readily detect the presence of corrosive sublimate in calomel?

11. Phosphorus poisoning. Sources, and post-mortem appearances.

12. Sources of accidental poisoning by arsenic (both acute and chronic). Properties of As_2O_3.

13. Ready tests for tartar-emetic.

14. Points of distinction between strychnia poisoning and tetanus? Strychnia poisoning and puerperal convulsions? Tests for nux vomica?

MATERIA MEDICA. — Instructor Markoe.

I. and II. What are, — (1) infusions, (2) tinctures, (3) fluid extracts, (4) waters, (5) solutions, (6) ointments, (7) cerates, (8) suppositories, (9) spirits, (10) oleo-resins?

III. Give full Latin officinal name, opium strength, and doses of, 1. Black Drop. 2. Dover's Powder. 3. Laudanum. 4. Extract of Opium. 5. How does the deodorized tincture of opium differ from laudanum?

IV. 1. Name and give the origin of the three officinal kinds of aloes. 2. Which sort is best for medicinal use, and why? 3. Name and give doses of three aloetic preparations. 4. Give the composition of Compound Cathartic Pills.

Sources, active principles, three preparations, and doses of each of the following drugs: —

V. Belladonna.
VI. Capsicum.
VII. Cinchona.
VIII. Senna.
IX. Cinnamon.

X. Dose of, 1. Acid. Hydrocyanicum Dilutum. 2. Camphora. 3. Chloral. 4. Elaterium. 5. Ext. Ergotæ Fl. 6. Ext. Hyoscyami. 7. Iodoformum. 8. Oleum Ricini. 9. Tinctura Aconiti Radicis. 10. Tinct. Veratri Viridis.

PATHOLOGICAL ANATOMY. — Professor Fitz.

1. What is dropsy, and what are its general causes?

2. What is the relation between mucous degeneration and colloid degeneration?

3. Why are local changes considered as important in determining the place of origin of tumors?

4. What and where are the essential changes found in rickets?

5. Where in the body are trichinae to be looked for, and how are they supposed to reach their seat?

6. Where may a premature cranial synostosis take place, and what may be the result?

7. What alterations of the brain are likely to be associated with a fractured skull?

8. What are the appearances of embolism of the myocardium?

9. What is fenestration of the semi-lunar valves, and what is its functional importance?

10. What is the method of applying the hydrostatic test, and what are the errors to be avoided?

11. In the examination of the lungs, what appearances are indicative of tuberculosis?

12. What are the general causes of intestinal obstruction?

13. What alterations of the stomach are caused by cancer?

14. What is meant by hypertrophic cirrhosis?

15. What alterations produce an increased density of the spleen?

16. What are the causes of a wandering kidney?

17. How do you distinguish between renal abscesses from embolism and those due to a pyelo-nephritis?

18. What are the remote causes of a dilatation of the bladder?

19. What alterations occur in hyperplastic endometritis, and with what may be it confounded?

20. What is the distinction between a corpus luteum and a corpus haemorrhagicum?

Third Year's Studies.

THERAPEUTICS. — Professor Edes.

1. Various methods of treating acute rheumatism. Expectant, alkaline, salicylic. Theories and results.

2. Give details of carrying out the above.

3. Hypnotics. Opium, chloral, bromides, lactucarium. Peculiarities of each.

4. Cathartics. Mention five of different kinds. State peculiarities of action, and occasions on which you would wish to use each?

5. The cinchona alkaloids.

OBSTETRICS. — Professor Reynolds.

1. Describe the position and shape of the broad ligaments of the uterus, and their relation to the walls and contents of the pelvis.

2. State in what way the foetal blood is oxygenated during its passage through the placenta, and give the general anatomical description of that region of the placenta in which this change is effected.

3. In a question of first pregnancy, five months advanced, of what value is the presence or absence of mammary changes? What appearances are expected in the breasts at that period?

4. Describe the course, and the ordinary or possible terminations, of a tubal extra-uterine pregnancy.

5. Recount the points at which the head of the child and its back are found, and give the name of the presenting shoulder or elbow in each of the four varieties of trunk presentation.

6. In a normal pelvis, a head of rather large proportional diameters has descended well into the cavity. The anterior fontanelle and the frontal suture are readily felt in the left anterior quarter of the pelvis; the occipital fontanelle is in the right posterior quarter, beyond easy reach. There are effective pains. Instruments are not used. Give in detail the steps of the differing varieties of mechanism by which this head may be expelled.

7. Describe with care the assistance which an accoucheur ought from time to time to render in a presentation of the pelvic extremity, occurring in a primipara. The pelvis is normal. The child is well formed, and is of average size. The pains continue efficient throughout the labor. No accident which necessitates prompt delivery befalls the mother.

8. Enumerate all the means at our command for the arrest of post-partum hemorrhage, and give the mode of employing each of them. The details of the operation for the transfusion of blood are not required.

9. State the several indications for the induction of premature labor. Within what limits does the time of election for the performance of this operation lie?

10. Give the differential diagnosis between a wholly inverted uterus and a projecting fibroid of intra-uterine origin.

SURGERY. — Professor Bigelow.

Describe and give the treatment of

1. Crural hernia.
2. Dislocations of the hip.
3. Traumatic aneurism of the palm of the hand.
4. Compound fracture of the ankle-joint.
5. Ovarian tumor.
6. Fistula ani.
7. Retention of urine.
8. Phymosis.
9. Glaucoma.
10. Describe the operation for the ligature of the common carotid.

CLINICAL SURGERY. — Professor Cheever.

[In addition to the following questions, the clinical report of a surgical case is required, to be presented on or before June 1.]

[One hour and a half is assigned for answering the following questions.]

Case I. — A middle-aged and robust woman enters the Hospital with the history of a sickness of four days' duration, — having got wet through, and sat in her wet clothes, she had a chill, and subsequently fever. Temperature now 102°.

She complains of pain of a throbbing and burning character, and of stiffness, all over her neck.

Her neck is uniformly swollen, brawny and dusky red, from the chin to the sternum, on both sides. There are no vesications. The voice is hoarse, respiration croupy, swallowing impeded; and an expectoration of a watery fluid from the mouth. No morbid appearances inside the mouth, or throat.

a. Diagnosis?

b. Dangers if not treated?

c. Treatment?

d. Prognosis, after the treatment you propose?

Case II. — A boy of ten years was struck by a locomotive and knocked senseless. He is brought to the Hospital totally unconscious. He remains totally, and then partially, unconscious for ten days.

On admission, a compound, depressed fracture of the parietal bone is found. He is trephined, and a pointed fragment raised. The membranes of the brain are found uninjured. No change of symptoms follows. Farther investigation shows a line of irregularity at the coronal suture. Being cut down upon the entire frontal bone is found imbricated, driven under and depressed by the two parietals, at the coronal suture. It is firmly wedged.

a. What do you call his condition?

b. By what produced?

c. What consequences may follow, immediate or remote?

d. Treatment?

THEORY AND PRACTICE. — Professor Minot.

1. Give an account of acute tuberculosis of the lungs, and the differential diagnosis.

2. What are the symptoms, diagnosis, and treatment of intussusception of the intestine?

3. What are the symptoms and prognosis of apoplexy from cerebral hemorrhage?

4. Give the symptoms and differential diagnosis of aneurism of the arch of the aorta.

5. Describe the different forms of acute pneumonia which occur in children, giving the differential diagnosis and treatment for each form, and stating whether it is usually a primary or a secondary disease.

6. Describe the proper method of feeding an infant during its first year, and mention under what circumstances and at what time it is desirable to wean.

7. Give all the organic diseases of the spinal cord that you can remember, indicating briefly the pathological anatomy of each, and a few of the characteristic symptoms.

8. Give the causes of facial paralysis, and the indications as regards prognosis to be drawn from the electrical examination.

CLINICAL MEDICINE. — Professor Ellis.

Give the differential diagnosis, the prognosis, and the treatment of as many of these cases as the time will allow, discussing them in the order in which they are arranged. Assume that symptoms not mentioned are wanting; but as omissions, intentional or not, may occur, state them, if essential. Success will depend more upon the quality than the quantity of the work. The intelligent discussion of the cases will have more weight than a hasty and inconclusive though correct diagnosis.

Case 1. — A gentleman, seventy-six years old, whose health had always been good, noticed that he was losing strength, flesh, and appetite. His abdomen enlarged, so that he was obliged to have his clothes let out. There was much flatulence, and a feeling of discomfort in the abdomen, but no pain. While the patient stood up there was dulness on percussion, with fluctuation below the level of the navel, and resonance above it. The limits of the dulness varied with the position of the patient. There was some oedema of the ankles. The urine was normal in amount, acid, high-colored, sp. gr. 1015. It contained numerous hyaline casts, some pus corpuscles, no albumen, no blood. Pulse natural. There was no appetite; much debility; no thirst; no jaundice; no vomiting; tongue clean; bowels free; he slept well.

Case 2. — A man, thirty years old, had been losing strength and flesh for several weeks, and complained of pain in the right hypochondrium. He was confined to the bed, had a pulse of 112, a hot skin, and was much prostrated and emaciated. A large, hard, uneven, and tender mass could be felt below the cartilages on the right side, extending to one inch above the level of the navel, and nearly to the median line. There was no diarrhoea. Urine scanty and thick. The pain was severe, requiring opiates. In a few weeks he suddenly coughed up an immense quantity

of inodorous pus, after which he raised a considerable amount of excessively fetid matter, and then again pure, inodorous pus in smaller quantities. In a few days his general condition improved, the pain ceased, and he was able to sit up in bed and take a fair amount of nourishment. He continued to expectorate moderate quantities of pure pus. There was then a hard, smooth tumor just below the right cartilages. It was not very tender, and there was no fluctuation. Abundant friction sounds with dulness on percussion were heard in the lower front and lateral regions of the right chest.

Case 3. — A clergyman, fifty-eight years old, of very active habits, had noticed for two years that his wind had been failing, so that he was obliged to go up stairs slowly. During the last summer he did an immense amount of missionary work, travelling and preaching constantly. Early in the winter he was suddenly attacked with severe pain in the chest, extending down the left arm. From that time he was in bed, growing constantly weaker, with dyspnoea and dropsy. When seen, Dec. 31st, there was anasarca of the right side of the body, right arm and right leg (he lay chiefly on that side). There was a large effusion in the right chest, a smaller amount of fluid in the left chest, and a moderate degree of ascites. Copious bloody expectoration; moist crackling over both lungs; impulse and sounds of heart feeble; no murmurs. Pulse, small, weak, irregular, and rapid. Frequent cough. Mind clear. No headache. Urine, about two pints daily, sp. gr. 1026, loaded with urates, small amount of albumen, a few granular and hyaline casts.

Case 4. — A man, twenty-four years old, single, book-keeper who worked hard, and took his meals at irregular hours, had enjoyed good health until a year ago. Since then he has complained of frequent pain in the head, not confined to one spot, often severe, and feeling as if the head would burst open. This symptom is liable to occur when he enters a room filled with people, such as a church, a lecture or an evening party, compelling him to avoid all such assemblies. On going into a dark room he often sees a sudden flash, as if the gas were lighted. He is much troubled by muscae volitantes. There is no pain except in the head. No difficulty in walking or standing, even with the eyes shut. Pulse 80. He takes no alcohol nor tobacco. Denies self-abuse, excessive seminal emissions and venereal disease. He has not lost weight. Appetite, bowels, and urine healthy. His eyes were examined by an eminent oculist, who pronounced them free from disease. He once gave up his occupation for several weeks, without any improvement. He has been slightly benefited by a restricted diet.

ADMISSION EXAMINATION PAPERS.

LATIN.

Translate: —

1. Galli victores paulò ante solis occasum ad urbem Romam pervenerunt. Postquam hostes adesse nuntiatum est, juventus Romana, duce Manlio, in arcem conscendit; seniores verò domos ingressi adventum Gallorum obstinato ad mortem animo exspectabant. Qui inter eos curules magistratus gesserant, ornati honorum insignibus, in vestibulis aedium eburneis sellis insedêre, ut, quum venisset hostis, in suâ dignitate

morerentur. Interim Galli, domos patentes ingressi, vident viros ornatu et vultûs majestate diis simillimos : quum Galli ad eos, veluti simulacra, conversi starent, unus ex his senibus dicitur Gallo, barbam suam permulcenti, scipionem eburneum in caput incussisse. Iratus Gallus eum occidit : ab eo initium caedis ortum est. Deinde ceteri omnes in sedibus suis trucidati sunt.

2. Interfecto Caesare, Antonius vestem ejus sanguinolentam ostentans, populum veluti furore quodam adversùs conjuratos inflammavit. Brutus itaque in Macedoniam concessit, ibique apud urbem Philippos adversùs Antonium et Octavium dimicavit. Victus acie, quum in tumulum se nocte recepissit, ne in hostium manus veniret, uni comitum latus transfodiendum praebuit. Antonis, viso Bruti cadavere, ei suum injecit purpureum paludamentum, ut in eo sepeliretur. Quod quum postea surreptum audivisset, requiri furem et ad supplicium duci jussit. Cremati corporis reliquias ad Serviliam, Bruti matrem, deportandas curavit. Non eadem fuit Octavii erga Brutum moderatio : is enim avulsum Bruti caput Romam ferri jussit, ut Caii Caesaris statuae subjiceretur.

FRENCH.

TRANSLATE : —

La Père de Famille et ses Enfants.

Un père de famille avait plusieurs enfants. Se voyant dans une extrême vieillesse, assez près de sa fin, il les manda tous. Lorsqu'il les vit assemblés, il prit plusieurs baguettes, et en fit un faisceau, qu'il donna à l'aîné de ses enfants, en lui ordonnant de le rompre. Celui-ci, après plusieurs efforts, n'en put venir à bout. Il le donna tout entier au second, et celui-ci au troisième, sans que ni l'un ni l'autre en pût rompre une seule baguette. Cela fait, le vieillard reprit le faisceau, et en sépara les baguettes ; ensuite il les distribua l'une après l'autre à chacun de ses enfants, et leur commanda d'essayer une seconde fois de les rompre. Alors ils les rompirent tous du premier effort. Mes enfants, leur dit le père, quand j'aurai pris congè de ce monde, il en sera ainsi de vous Tant que vous demeurerez tous dans l'union, vous serez si forts que rien ne pourra vous ébranler ; mais dès que vous serez désunis, vous vous affaiblirez de telle sorte que le moindre choc suffira pour vous abattre.

La Tour de Londres.

A l'extrémité de Londres, sur la rive gauche de la Tamise s'élève une vieille tour carrée, que le temps semble avoir affermie sur sa base. Bâtie par le Normand Guillaume, elle est restée debout depuis le jour de la conquête. Placée aux portes de la cité, elle en fut longtemps la gardienne ; mais aujourd'hui ce n'est plus une citadelle nécessaire à la sûreté de l'état, c'est un monument historique, un débris du passé qui excite l'orgueil des Anglais et la curiosité des étrangers. Là, dans des salles immenses, on voit symétriquement rangés des milliers de lances et d'épées, des armes de toutes les formes, des trophées, de toutes les époques. Là souvent le philosophe regarde, avec une émotion douloureuse, des instruments de torture enlevés à l'inquisition espagnole, tandis que de jeunes femmes pèsent, en pâlissant, la hache qui fit tomber la tête d'Anne de Boleyn. Une salle de ce vaste bâtiment contient les images et les armures de tous les princes qui ont régné sur l'Angleterre

depuis Guillaume ; dans une autre sont déposés les joyaux de la couronne et tous ces trésors gothiques qui ne voient le jour qu'au sacre des rois. Enfin la Tour de Londres est comme un temple, où l'Angleterre a déposé une partie de sa puissance, de ses richesses et de ses souvenirs.

L'Enfant et l'Échelle.

Des enfants, l'autre jour, jouaient à la cachette,
J'en vis un qui monté dans un grenier á foin,
De peur qu'elle ne fît découvrir sa retraite,
Poussait à coups de pieds et rejetait au loin,
Au risque presque sûr de la briser, l'échelle
Dont il venait d'avoir besoin
Pour grimper dans sa citadelle ;
Et cela ne m'étonna point,
Car plus d'un homme fait lui ressemble en ce point.
Il est même fort ordinaire
D'en trouver qui, comblés d'honneurs, de dignités,
Méconnaissent la main qui fit leur sort prospère :
Ingrats qui vont jetant leur echelle par terre
Pour qu'on ne sache pas comment ils sont montés.

GERMAN.

Daß Ihr Aufenthalt in Wien glücklich und fröhlich gewesen, vernehme ich mit viel Vergnügen und danke nur mit wenig Worten sogleich für das übersendete größere Stück. Zu der kleinen Posse haben unsere Schauspieler gleichfalls Lust ; nur Weniges wird abzuändern sein. Das große Stück wird schon mehr Bedenken finden. Ich habe auch darin das sehr schöne Talent Ihres lieben Sohnes bewundert. Ueber die Möglichkeit und Räthlichkeit einer Aufführung desselben spreche ich alsdann, wenn ich mit mehreren Freunden Rath gepflogen. Vielleicht läßt sich Alles bei Ihres Theodor's Gegenwart hier im Orte arrangiren und abthun. Möge sein Besuch von guter Vorbedeutung sein, daß wir uns in Weimar und Dresden öfter, als bisher geschehen, wiederfinden und durch wechselseitige Einwirkung beleben. Für dies Mal ein herzliches Lebewohl und die schönsten Empfehlungen an die wertheſten Ihrigen.

Der Fischer.

Saß ein Fischer an dem Bach,
Wollte Fischlein fangen ;
Doch es blieb den ganzen Tag
Leer die Angel hangen.
Endlich zuckt es, und er sah
Fischlein zappelnd schweben.
Goldenröthlich hing es da,
Fleht ihn um sein Leben.

„Lieber Fischer, laß mich los,"
Sprach 's mit glatten Worten,
„Laß mich in der Wellen Schooß,
Bis ich groß geworden."
„Fischlein, das kann nicht geschehn,
Hier hilft kein Beklagen,
Ließ ich jetzt dich wieder gehn,
Möcht' zu viel ich wagen."

PHYSICS.

1. What may be the effect of two or more forces acting simultaneously on a body? Illustrate.

2. How will a man rising in a boat affect its stability?

3. Define tenacity. What is a convenient measure of tenacity?

4. Explain the process known as tempering and annealing.

5. Show that the pressure of a horizontal layer of water is the same upwards as downwards.

6. What is the distinction between gases and liquids? Illustrate.

7. What are the laws of the reflection of sound? Illustrate by a diagram.

8. Deduce formulas for reducing Centigrade degrees to Fahrenheit, and *vice versa*.

9. Explain the fall of temperature which results from mixing ice and salt together.

10. What is meant by the polarization of light?

GEOMETRY.

1. (1.) Draw and define a triangle, a quadrilateral, and a pentagon. (2.) In what respects do these agree with and differ from one another? (3.) Draw and define a trapezium, a trapezoid, and a parallelogram. (4.) In what respects do these agree with and differ from one another? (5.) Draw and define an "oblong" rectangle and a square, a rhomboid and a rhombus. (6.) What are their resemblances and their essential differences?

2. (1.) How can you *show* that the sum of the three angles of a triangle is equal to two right angles? (2.) That the sum of the two smaller angles of a right-angled triangle is equal to a right angle? (3.) That of triangles which have the same base and equal perimeters, the largest triangle is isosceles? (4.) That a diagonal divides a square into two equal isosceles triangles?

3. Prove (*a*) that in a right triangle the two triangles formed by a perpendicular, drawn from the vertex of the right angle to the hypothenuse, are similar to each other, and to the whole triangle; (*b*) that the perpendicular is the mean proportional between the segments of the hypothenuse.

4. (*a.*) To what is the area of a trapezoid equal? (*b.*) Prove that the proposition is true. (*c.*) How may you find the area of any polygon?

5. (*a.*) What measures an angle formed by the meeting of a tangent and a chord? (*b.*) An angle formed by the intersection of two chords? (*c.*) Prove the first.

6. If a boy, who had measured his quadrangular garden, told you its angles — taken in order — were 85°, 74°, 95°, 90°, how could you, without measuring the angles, convince him tha the had made a mistake?

ALGEBRA.

[Preserve all the work.]

1. If $a = 4$, what is the numerical value of $\frac{a^2 - 16a^{-2} + a^0 - \sqrt{a^3}}{\sqrt{\left(\frac{1}{a}\right)^2}}$?

2. Multiply $4a^2 - 4ab + b^2$ by $2a^2 - 3ab - 4b^2$, and divide the product by $2a - b$.

3. Divide: —
$$-40b^5 + 68ab^4 + 25a^2b^3 + 21a^3b^2 - 18a^4b - 56a^5$$ by $5b^2 - 6ab - 8a^2$.

4. Five times the greatest width of Hellas, plus two-fifths of its greatest length, was 570 miles more than the sum of its length and breadth. Ten times the difference of its length and breadth was equal to 160 miles less than two times their sum. How long and wide was Hellas?

5. One half the length of the first side of a triangle, plus three-fourths of the second, plus four-fifths of the third, is equal to 34 meters. The second is as much longer than the first as the third is longer than the second. If the distance around the triangle is 48 metres, how long is each side?

6. Three times the length of the perpendicular drawn from the vertex of a certain right-angled triangle to the hypothenuse is equal to twice the length of the longer segment of the hypothenuse. If the length of the shorter segment is 8, what is the length of the perpendicular and of the longer segment?

BOTANY.

1. Name, describe (and illustrate by figures, if you can), the parts of a flower.

2. What is the structure of an exogenous stem?

3. Give some of the general characters of the order Leguminosae, and mention some of the more important members of the order.

4. Same with Rosaceae.

ERRATA.

Page 13, last line, for " p. 161," read " p. 12."

Page 25, third line from bottom, for " p. 161," read " p. 12."