A. M., LL. D.
President 1810-1828.

THE

Harvard Medical School

A HISTORY, NARRATIVE AND DOCUMENTARY

1782  1905

BY

THOMAS FRANCIS HARRINGTON, M. D.

Class of 1888

EDITED BY

JAMES GREGORY MUMFORD, M. D.

Class of 1888

VOLUME II

ILLUSTRATED

NEW YORK : : CHICAGO

LEWIS PUBLISHING COMPANY

1905

CONTENTS.

Volume II.

The Harvard Medical School

A HISTORY

Volume II

UNIVERSITY GOVERNMENT.

The Harvard Medical School.

CHAPTER XVIII.

UNIVERSITY GOVERNMENT.

While the development of the Medical School was advancing, important changes were taking place in the management of the College. John Thorton Kirkland was elected President of Harvard on August 23rd, 1810. He had been for sixteen years pastor of the New South Church in Boston, where he won the confidence and sympathy of the best people in the community. For some years there had been a feeling established with more or less open discussion, that Harvard College was not keeping pace with the demands of the rapidly growing country, that it was not in harmony with the spirit of the times, that the discipline, organization, and instruction of the College were far from what they should be. The first and third of these criticisms were readily met and overcome, but the question of organization and management became very pressing and calls for some consideration here.

The management of the College had been entrusted to three different bodies of men who held their authority under an Act of the General Court of Massachusetts,—an act passed in 1642, a charter granted in 1650,* with an appendix dated 1657; a constitution in 1780, revised in 1821; and an act of the Legislature of 1814.

The first of these bodies having the management of the College is the *Faculty*. This body has in charge the immediate government of the College and is composed of the President

* First Charter is still in force. It is preserved at the College Library.

and a certain number of the resident Instructors, about ten or twelve usually; this board of Instructors deals with the discipline of the students.

The second board is the *Corporation.*† This board is superior to the Faculty, and is composed of the President, the Treasurer, and five "Fellows." The Corporation have the management of the funds and revenues of the College; they appoint the Instructors and other officers, and assign their duties and pay; they make laws for the government of the instructors and students; and fill vacancies in their own body.

The Corporation are restricted in their powers by the third body, the *Overseers.** It was with this last body of officers that the events to which we shall refer were associated. By the charter of 1642 the personnel of the Overseers comprised the Governor of the Colony and Deputy Governor for the time being, all the magistrates of the Colony, and the teaching elders of certain specified Congregational Churches, together with the President of the College. This arrangement worked as well perhaps as any possible at that time, but in the course of a century and a half conditions had changed. All the learned men were not now confined to one profession, and it became evident that it would be both wise and expedient to appoint other persons of recognized ability to places of trust and power in the councils of the College. In 1780 James Bowdoin was elected into the Corporation, the first individual ever elected into that body, except sundry treasurers, who was not a clergyman, professor or tutor. The disturbed political state of the country at that time made it seem unwise to carry the new principle any further. A beginning had been made, however, and the choice of Bowdoin proved an

† Established 1650, an appendix 1657, recognized by the Massachusetts Constitution of 1780.

* They hold their power by virtue of the Act of 1642, the constitution of 1780, and the statutes of 1810 and 1814.

excellent one, both for the College and for the principle involved. The Constitution of Massachusetts adopted in that year (1780) provided* that the Overseers should consist of the Governor, Lieutenant-Governor, Council and Senate of the Commonwealth, with the President of the College, for the time being, and the Ministers of the Congregational churches in the towns of Cambridge, Watertown, Charlestown, Boston, Roxbury, and Dorchester. The senators who were elected to serve on the board frequently found it impossible to give the time necessary, either because of their duties in the General Court, or because during its recess their homes were in many instances distant from Cambridge.

Therefore, in March, 1810,† an Act was passed changing the conditions so that the Board of Overseers should consist of the Governor, Lieutenant-Governor, Council, President of the Senate, and Speaker of the House of Representatives, President of the College, fifteen Ministers of Congregational Churches, and fifteen laymen inhabitants of the State, to be elected by the Old Board of Overseers. In passing this law the charter rights of the College were preserved, and it was provided that the Act must be accepted both by the Corporation and the Overseers before it became law. This last clause proved very troublesome, and in 1812, when politics changed the personnel of those having charge of the making and enforcing of the laws of the Commonwealth, the law of 1810 was repealed,‡ and the Board of Overseers was reëstablished as it had existed prior to 1810. This last Act (1812) did not provide for the submission of the Act to the Corporation and Overseers for their approval before it could become law; consequently its validity was denied by those

* Chapter V, Sec. I, Act 3, June 15, 1780.

† Act passed March 6, 1810; accepted by the President and Fellows, March 16, by the Overseers, April 12, 1810.

‡ February 29, 1812.

bodies. Submission to its provisions, however, seemed the wisest course, and nothing further was done until February 28th, 1814, when the Act of 1812 was itself repealed, and the Act of 1810 was re-enacted.

In the Convention for amending the Constitution of Massachusetts, held in December, 1820, it was suggested that the Board of Overseers be unrestricted as to the denomination of the ministers eligible for election. After consultation with the President and Fellows and with the Overseers, the Committee (Daniel Webster, Chairman) reported to the Convention that such an amendment to the College charter would be agreeable to the College authorities. The report was adopted by the Convention, but when it was submitted to the people of the State it was rejected by an overwhelming majority.* In 1843 clergyymen of all denominations were made eligible as Overseers, and in 1851 a limited term of service was introduced. Since then the changes in the Board of Overseers have been briefly as follows:

1852—The Board to consist of the Governor, Lieutenant-Governor, President of the Senate, Speaker of the House, the Secretary of the Board of Education, the President and Treasurer of the College, and members elected by the Senate and House of Representatives. In 1865 † the election of Overseers was transferred to the Bachelors and Masters of Arts, and the Honorary Graduates.§ In 1880 persons not citizens of the state of Massachusetts were made eligible as Overseers.

Now to return to the period with which we are dealing. For some time previous to 1823 there had been dissatisfac-

* The vote was 8020 in favor of, and 20123 against the amendment.

† Act of April 28th, 1865, accepted by President and Fellows, December 15; accepted by Overseers, September 21, 1866.

§ Except members of the Corporation and officers of instruction or government, none of whom are eligible as Overseers, or entitled to vote in the election of Overseers.

tion with University conditions, both among the resident instructors and in the community at large. This dissatisfaction arose principally from three causes. First, The existing relations between the Corporation and the immediate Government, or Faculty. Secondly, The diversity of opinion concerning the discipline, instruction, and morals of the College. Thirdly, The excess of expenditure beyond the income of the College. These questions all have a direct bearing on the affairs of the Medical School, and call for some consideration in these pages.‡

‡ The facts here related are gleaned from Quincy's "History of Harvard College"; the College records; and various pamphlets published during the many controversies. The principal documents relating to the claim of Resident Instructors to form part of the Corporation are:—

1. The Memorial of "the Subscribers, Resident Instructors in Harvard College to the Reverend and Honorable the Corporation of Harvard College." Dated "Cambridge, March, 1824."

2. "Remarks on a Pamphlet printed by the Professors and Tutors of Harvard University, touching their right to the exclusive Government of the Seminary. By an Alumnus of that College, Boston, 1824."

3. A Letter to John Lowell, Esq., in reply to a publication entitled, (the foregoing No. 2), signed Edward Everett, dated Cambridge, Sept. 25, 1824.

4. "Further remarks on the Memorial of the Officers of Harvard College. By an Alumnus of that College, 1824."

5. Memorial of the Professors and Tutors in the University to the Reverend and Honorable the Overseers of Harvard University at Cambridge, dated May 21, 1824.

6. Report of the Committee of the Overseers of Harvard College on the Memorial of the Resident Instructors, Jan. 6, 1825.

7. Outlines prepared for an argument to be delivered before the Board of Overseers of Harvard College upon the Discussion of the Memorial of the Professors and Tutors of the College claiming a Right that none but Resident Instructors in the College should be chosen or deemed "Fellows" of the Corporation, the substance of which was spoken before the Board at their meeting in January, 1825. By Joseph Story, one of the members of the Board.

8. "The Jurist," Vol. I, No. 2, for April, 1829.

9. Story's "Miscellaneous Writings," page 368.

10. Speech delivered before the Overseers of Harvard College, Feb.

From the earliest period, at least one of the instructors in the College had been a member of the Corporation as well as of the Faculty. In 1806 the Corporation had come to be composed exclusively of non-resident Fellows.

When vacancies occurred they were filled by the election of non-residents, and this led the resident officers to believe that they were to be permanently excluded. So feeling grew until 1823, when the residents claimed that *residence* was originally a qualification for fellowship, therefore, the Corporation ought to consist of fellows, i. e., resident officers of the College. This contention came to an issue then in 1823 when, upon the death of John Phillips,* a memorial signed by six of the resident instructors§ was presented to the Corporation asking that the vacancy be not filled "until they can have an opportunity of laying before your body some representations in relation to the subject." Accordingly (April 2d, 1824) eleven of the resident teachers drew up a memorial† maintaining as a matter of *chartered right,* the claim of the resident instructors to be elected to vacancies in the board of the President and Fellows of the College. The Corporation did not act upon the memorial, and in June nine of the same instructors presented the same memorial to the Overseers. The matter was referred to a committee, and so rested for some months. The Committee reported (January 6, 1825) that it is not necessary, by the charter rights or otherwise, that the Fellows of Harvard College be either resident in Cambridge, instructors, or stipendiaries. The memorialists asked

---

3rd, 1825, in behalf of the Resident Instructors of the College, with an Introduction; by Andrew Norton, 1825.

11. Remarks on changes lately proposed or adopted in Harvard University. By George Tichnor, Smith-Professor, &c., 1825.

* Elected a Fellow, 1812.

§ The Medical Professors did not sign it.

† Five Professors engaged in instruction to undergraduates, two engaged in the instruction of graduates, and four Tutors.

for an opportunity to be heard in reply. There resulted a most interesting and thorough discussion of College rights. John Lowell defended the report, while Edward Everett, Professor of Greek Literature, and Professor Norton, advocated the claims of the residents.

The debate lasted three days, when the following resolutions were *unanimously* adopted by the Corporation:

"That it does not appear to the Board, that the resident instructors in Harvard University have any exclusive right to be elected members of the Corporation.

"That it does not appear to this Board that the members of the Corporation forfeit their offices by not residing in the College.

"That in the opinion of this Board it is not expedient to express any opinion on the subject of future elections."

This settled the question of charter rights which had for more than a century and a half caused dissatisfaction and discussion.

On September 12, 1821, a letter regarding the question of discipline, instruction, and morals of the College was sent to several resident instructors, and thirty-eight questions covering these topics were submitted for answers. In July, 1823, a committee (Joseph Story, chairman) was appointed to inquire into the state of the University, and report what changes are necessary. Finally in June (10th), 1825, a new code of laws was drawn up, and those laws, amended from time to time, govern the University to-day. Paraphrased, the laws are these:

The "Immediate Government" assumed the title of "Faculty of the University." The President was head of the Faculty, without any visitorial power or independent negative. He has the general superintendency of the University. The University was divided for the purpose of instruction into Departments, each having a general superintendency of its own studies. Students were given the right to select, in a degree,

their own studies. Students were classified according to proficiency,* "and on their number the emoluments of the President and Professors were made, in a degree, to depend." The University was opened to special students, i. e., students not seeking a degree. Frequent examinations were established. The system of fines was abolished, and a system of discipline and organization was inaugurated.

These laws, designated "Statutes and laws of the University in Cambridge, Massachusetts," comprise about forty pages, while there are one hundred and fifty-three separate regulations. In a sense they mark the beginning of the modern Harvard University.

The third and last difficulty to be settled was that of *Funds*. Previous to the election of President Kirkland, the duties of the President were largely nominal. The general management of the College, such as distribution of studies, appointment of tutors, and all executive powers, were vested in the "Immediate Government". With the accession of Kirkland to the Presidency, a change took place. He was vested with unprecedented powers in the management of the University. Surrounded by a body of able advisers, who had confidence in his judgment, he carried the College forward at a pace which meant much for its future. The President was given control of the finances, a control which had previously been exercised by the Corporation. The salaries of the President and Professors were raised;† the number of professorships was increased from ten to twenty-five;‡ young men were elected to

* This clause was the cause of the "rebellion" of 1827. It was then abandoned.

† This was necessary at that time on account of the increased price of food, etc.

‡ Four depended upon fees, or voluntary subscriptions; three were titular, being confined to Tutors after six years' service; eight rested upon foundations, adequate to their support, and independent of the general unappropriated funds of the College.

vacancies as fast as such vacancies occurred; of the one hundred thousand dollars received from the legislature, twenty thousand went for the erection of the new Medical School building in Boston, and twenty-five thousand were distributed to beneficiaries,§ so that only fifty-five thousand dollars were added to the College funds proper, while the erection of University Hall alone cost sixty-five thousand dollars. Besides these expenditures, there were twenty-five thousand dollars paid for repairs of college buildings and for beautifying the grounds. Eight thousand dollars went to the Library, and to procure philosophical and chemical apparatus.

By this wave of prosperity the Professors of the Medical School benefited. Up to this time their support was derived from the fees received from students and from the income of special funds. Their salaries were now increased, and the additional expense was assessed on the senior class of undergraduates, by an addition of ten dollars to their quarterly bills.

Then came the year 1824, when all efforts to have the legislature renew the bank tax grant failed. Retrenchments became necessary. The number of students in the College fell from three hundred to about two hundred; a reduction of tuition from $55.00 to $30.00 per annum was made; a union of professorships was recommended where practicable; and all this resulted in a slight saving.

Regular monthly meetings of the Corporation were now inaugurated, and monthly financial statements with an annual report from the Treasurer. Thus matters stood in 1831, when

§ The new professorships were paid for by raising the tuition one-fourth part, and in order to overcome the effect which this might have in reducing the number of students it was provided "that the Corporation might assist meritorious students, when unable to pay the additional tuition."

new statutes for the Medical School were adopted. To these we will return later.

In 1824 a general overhauling of University affairs took place. The following report, dated October, states the views of the Medical Faculty. It has another interest. J. C. Warren, the writer, refers in it to the study of comparative anatomy, and that is the earliest recognition which I have been able to find among us of that branch of medical science. Warren's letter in part reads:

"As the course which I have the honour to deliver is not so intimately connected with the system of study pursued in the University, it will not I suppose be desired that I should reply at great length to the inquiries in your communication.

"The course of Anatomy which I deliver in the University begins on the first of April. The lectures are an hour long, given three times a week at 5 P. M. without much variation, and terminate in June. They are attended by the Senior class, by resident graduates and students of medicine in the immediate vicinity. The attendance of the Senior class is not compulsory; but the course is pursued with regularity by the whole class without many exceptions.

"The plan of the course is the following. First there is an exposition of the action or operations, which go on in a living human body; called functions. These being pointed out. Next is shown the apparatus for performing each of these functions, all which constitutes the human structure. This is followed by a comparison of the machinery by which a function is performed in man, and in the nine classes of animals; its adaption in each class to the peculiar habits of the class. Hence flows the irresistible influence of the action of a single almighty power in so curiously modifying organs, which preserve their analogy thro' all the classes, to the modified functions they are to perform; . . . occasionally in the course remarks are made of a surgical and pathological nature, when they can be employed to guard the student from error and disease; and when they can be used for practical purposes in the learned professions, that is, in law and divinity.

"No text-book is employed in this course, but I should readily undertake the preparation of one, if it should be thought necessary and be commended by the Government of the University.

"In regard to any inconveniences which may arise from the organization of the College government, it will not be expected that any material information may be given from my department. In common with

a large portion of this community, I entertain an opinion that notwithstanding the great improvement, discipline of our College may be and ought to be improved. That the age at which a considerable part of the students are there placed demands a more wakeful and scholastic discipline. But I am aware that great, though not insurmountable difficulties will attend its introduction. It appears to me that no difficulties are unsurmountable when the mass of the intelligent community are disposed to aid in its introduction—and this I believe they will be if the changes are slowly matured and in such way as to bring the sense of this community as far as practicable to take cognizance of and to act in thus maturing them."

In the same letter Warren speaks of the necessity for athletic exercises as a part of the College curriculum. Athletics are seldom thought of to-day in connection with the Medical School. Conditions have changed very much since those lines were penned. Many no doubt may feel that Warren's suggestion has been over-developed in the College proper, but none will deny the expediency of that wise teacher's advice. He says:

"There is one branch of education the improvement of which seems to fall more especially within the cognizance of my department; and on this I feel myself called on to say something because it has been in a great measure neglected. The neglect of gymnastic exercises is a most lamentable deficiency in our mode of education. When I look around on a collection of students in our college and observe their puny, sickly appearance, I experience a profound emotion of pity and regret. Especially when I consider that many of these individuals may have to obtain subsistance by individual efforts; and that no one can avail himself of his intellectual acquisitions in their full extent without more constitutional vigor than is possessed by a greater part. It is well known that this subject receives great attention in foreign universities,—that various methods are employed to invite and encourage the student to the pursuit of healthy exercise. Is this impracticable here?

"I have thought that if a piece of land were laid out at some little distance from College, with 4 compartments separated by hedges—one compartment of one or two acres for *each class*—provided with incitements to run; jump; throw quoits, or javelins; bats and balls; a small shed or building in each for occasional shelter—the necessary apparatus which should be as various as possible and under the care of a single waiter—and the place occasionally visited by the tutors in a familiar way—it being

understood that every student was to pass some time there daily; and when the ground is covered with snow, that they should themselves remove it—proper conveniences being supplied. Such an arrangement, it appears to me, would not fail of providing excellent effects on the moral and physical dispositions of the students.

"I know not what difficulties may have prevented the execution of some such plan. It appears to me that if there be a deficiency of funds in the College, an adequate sum might be raised by subscription for an object of so much consequence. But if it cannot otherwise be accomplished than by some sacrifice, I firmly believe there is no one branch of education which might not be advantageously exchanged for this."

On August 16, 1825, the Corporation appointed President Kirkland, with Jackson and Warren, a committee to devise a plan for gymnastic exercises at the University.

The investigation into the causes of existing conditions relating to the College brought out the following letter from a man closely identified with her interests. The letter is illuminating:

"Boston, October 26, 1824.

"Dear Sir: In conformity with the letter rec'd from you I have prepared such a report or answer as seem'd to become my department. I must apologize for not doing it sooner: I mistook the time to be December instead of September.

"There is one subject involving the interest and prosperity of our College on which I could not speak in the report; and which in truth I must ask leave to confide to you personally.

"From many inquiries and much observation I have come to the conclusion that the popularity and the prosperity of the College is more influenced by religious opinion than any other cause. The difference of political opinion has had comparatively no effect; now if our College be unpopular is it to be attributed to its government being in the hands of decided and influential federalists? A large part of this community consists of individuals of religious sentiments, opposed to those inculcated at Cambridge. It is thought by some who have studied the matter that two-thirds of the state are strongly opposed to the religious opinions, which flow from our alma mater. They complain with deep feeling that Cambridge is not merely a literary seminary but it is a school of sectarian doctrines—doctrines which they view with alarm and horror. They ask what necessary connection is there between literature and sectarian religion? Cannot you give us a University without a school of theology? Cannot our children be permitted to learn the various parts of a scientific

education without imbibing doctrines which we consider poisonous—and which in our view far outweigh the other in importance? Separate the theological school, separate sectarian instruction; give a fair representation to those of different opinions, and we shall no longer hear of new colleges starting up; we shall not be obliged to send our sons 50 or a hundred miles from us when the stream of knowledge is floating at our doors.

"Such Sir, is the language which has been held to me repeatedly and earnestly by persons of elevated minds and excellent characters; and I confess for myself I am sincerely of opinion that the interest of our University would have them who are anxious for its prosperity and concerned immediately in its welfare, instead of propagating any exclusive sectarianism, rather to build up opportunities for acquiring information from other and opposite denominations of Christians. Sects must exist—they are necessary to the health—to the very life of the Christian religion; but the very necessity of their existence forbids exclusion.

"My great confidence in your liberality, your profound views and in the deep interest you feel for our University would form my excuse for troubling you with remarks on a point of so great difficulty and delicacy. I wish the knowledge of these remarks as coming from me to be confined to yourself. Not but that I would if necessary declair them in the most open and decided manner."

MEDICAL SCHOOL;

DETAILS OF GOVERNMENT,

1827 TO 1847.

CHAPTER XIX.

MEDICAL SCHOOL;

DETAILS OF GOVERNMENT,

1827 TO 1847.

There were now (1825) fourteen Medical Schools in the United States, seven in New England, three in the Middle States, two in the Southern States and two in the Western States.* These schools had over two thousand students, and there were graduated in 1826 over four hundred and sixty young men.

In July, 1827, the Medical Faculty of Harvard sent a long communication to the Corporation, dealing with the question of the relationship between the two bodies. The following reply was received, and since it served for many years as the

---

*		Founded.	Students.
1.	University of Pennsylvania, Medical School.....	1765	480
2.	" " New York, " "	1768	196
3.	" " Harvard, " "	1782	128
4.	Dartmouth College, " "	1796	80
5.	University Maryland, " "	1806	300
6.	Yale College, " "	1810	110
7.	University of New York (Fairfield).....	1812	120
8.	" " Transylvania, Lexington, Ky., Medical School	1817	200
9.	Vermont Academy of Medicine.....	1818	130
10.	Ohio Medical School	1819	40
11.	Bowdoin College Medical School.....	1820	60
12.	University of Vermont	1822	60
13.	Williams College, Berkshire	1823	100
14.	Medical School of South Carolina.....	1824	50

basis of official standing for the Medical School so far as its connection with the College was concerned, I give it in full:

"August 9, 1827."

"It is agreed between the Committee appointed for the purpose and the Medical Faculty that the fees received from medical students for diplomas and degrees during the present and four succeeding years be paid to the Medical Faculty to be applied by them to the following uses, viz:

"1. To pay for the Diplomas of the Medical Graduates.

"2. To defray the expenses of such repairs of the Medical College and the expense of making such Insurance on that building as the Corporation shall approve.

"3. To defray the expense of janitor.

"4. Whatever balance may remain after defraying the expense above specified to be invested by the Faculty in such manner as the Treasurer shall approve, and to constitute a fund from which any extraordinary expense on the building, which the Corporation shall from time to time authorize, may be defrayed.

"The Faculty is to render annually an account of their receipts and expenditures supported by proper vouchers, the Corporation to have a right to rescind this agreement whenever they see fit.

"Signed, Eben Francis, Treas.; F. C. Gray, Com. for Corp. of Harvard College.

"For the Faculty,

"Walter Channing, Dean."

The first Treasurer's report of which there is record is dated:

April 9, 1823—Disbursements Amount to	$781.86
Received	556.77
Balance	$225.09

which was provided for.

"Further that the sum appropriated for the library was $132.79, and,

"That the Accounts were rightly cast and duly vouched.

"J. Jackson, Treas."

The following arrangement of lectures prevailed, with slight modifications, for more than twenty-five years after the opening of the Massachusetts General Hospital (1821):

" Hospital, Medical Visit ¼ before 9 to ¼ 11.
" Surgery, Saturday at 12.
" Dr. Jackson Monday & Thursday 3 P. M., other days 11 to 12.
" Dr. Channing, Friday afternoon at 3 Tuesday & Saturday, 9 A. M.
" Dr. Bigelow, Tuesday 3 P. M. Wednesday & Friday 9 to 10.
" Dr. Warren daily at 12.

The course of lectures was changed in 1827 so as to begin on the third Wednesday in October, instead of the corresponding day in November, and the time allotted to the examination of each candidate for a degree was fixed at forty minutes; ten minutes for surgery and anatomy; and from five to eight minutes at least for other branches. These examinations were held at the Medical School instead of at the house of some member of the Faculty. The diplomas were signed by all the Faculty, a custom which prevailed for many subsequent years, and the successful candidates gathered at the house of one of the Faculty to receive their diplomas. The diplomas were granted semi-annually.

The formal extension of the course of lectures from thirteen weeks to four months was anticipated by some years prior to 1831. The final step was necessary to meet the demands of the anatomical department as early as February, 1825, when J. C. Warren and Jacob Bigelow were appointed a committee to draw up an Act on Dissection. The Medical Faculty appropriated three hundred dollars annually to be at the disposition of the Professor of Anatomy for the purpose of encouraging the study of practical anatomy. In 1830, the above arrangement not proving satisfactory to Warren, he agreed to furnish anatomical subjects to the students at five dollars each, on condition that the Faculty should pay him $200 at the close of the Lectures. This sum was assessed on the five professors in the proportion which their respective fees for tickets bore to each other.

In 1830 the time for beginning lectures was changed to the third Wednesday in November, as the interests of the ana-

tomical department required a change. The discussion of the changes led to the adoption by the Corporation (March 17, 1831) *of a four months* course of instruction beginning on the third Wednesday in October, and a corresponding alteration in the Statutes was made, September 22, 1831, as follows:

"STATUTES OF 1831.

"I. The Faculty of Medicine of the University shall consist of the President and the Professors and Lecturers authorized to give instruction to the medical students. This Faculty shall always have a Dean elected by themselves, for such periods as they may think proper, and may also adopt rules for their own government, provided that the same do not, in any respect, contravene the laws of the University.

"II. Students in medicine, designing to attend the Medical Lectures, or any of them, shall be matriculated in this University, by entering their names with the Dean of the Faculty of Medicine, to be enrolled by him; and by signing an obligation to submit to the laws of the University, and to the direction of the Faculty of Medicine.

"III. There shall be holden by the Faculty four meetings annually for the purpose of examining candidates for the degree in Doctor of Medicine. Two of these meetings shall be for private and two for public examinations. They shall be holden in the Massachusetts Medical College, unless otherwise specially ordered. They may be continued by adjournment, by vote of the members present; and if only one member attend at the time and place designated, he may adjourn the meeting from day to day till three members of the Faculty may attend the meeting. Three members of the Faculty must be present on every examination.

"IV. The first meeting for private examinations in every year, shall be holden on the day next succeeding that on which the winter courses of Medical Lectures shall terminate, at ten o'clock, A. M. The second meeting for private examinations shall be holden on the Monday next but one preceding the day of the annual Commencement in the University, at ten o'clock A. M. In extraordinary cases, the Faculty may hold meetings for private examinations at other periods.

"V. The meetings for public examinations shall be holden within one week after the termination of the stated annual meetings for private examinations respectively, on such days as the Faculty may appoint, if not otherwise ordered by the President. These meetings shall be open to the Governors and Inspectors of the University, to the Fellows of the Massachusetts Medical Society, and to such other respectable persons as may wish to attend them.

"VI. Every candidate for the Degree of Doctor in Medicine must com-

ply with the following conditions before being admitted to a private examination, viz.:

"1. He shall satisfy the Faculty that he has arrived at the age of twenty-one.

"2. He shall have attended two courses of the Lectures delivered at the Massachusetts Medical College by each of the Professors.*

"3. He shall have employed three years in his professional studies, under the direction of a regular practitioner of medicine.

"4. If he has not received a University education, he shall satisfy the Faculty of Medicine in respect to his knowledge of the Latin language and experimental philosophy.

"5. He shall, four weeks previous to the day on which he presents himself for examination, have given notice of his intention to the Dean of the Faculty, and at the same time shall have delivered or transmitted to the Dean, a dissertation written by himself, on some subject connected with medicine.

"VII. Every dissertation shall be submitted by the Dean to the examination of the Faculty in the mode which they shall point out.

"VIII. At the meetings for private examinations the Faculty shall examine all those candidates who shall present themselves, after having complied with the conditions enumerated in the sixth of these statutes, viz.: Anatomy, Physiology, Chemistry, Materia Medica, Pharmacy, Midwifery, Surgery, and the Theory and Practice of Medicine. At these meetings every candidate shall be examined separately, and the decision of the Faculty in respect to each shall be made and declared to him immediately after the examination has closed. The decision in respect to each candidate shall be determined by the votes of the major part of the members of the Faculty present at the examination of the same; and this decision, if favorable to the candidate, shall be recorded by the Dean. In the decisions to be made at these meetings, regard shall be had to the dissertations, as well as to the examinations.

"IX. Those candidates who have been approved according to the eighth of these statutes, may present themselves at the public examination next ensuing after such approbation. Each candidate so presenting himself, shall then read and defend, or be examined upon the dissertation, which he shall have previously submitted to the Faculty. At the close of each public examination, the Faculty shall decide in respect to each candidate, whether he shall be recommended as worthy of the degree for which he has applied. The decision of the Faculty in respect to all those candidates whom they so recommend, shall be recorded by the Dean, and shall by him be certified to the President, to be laid before the Senatus Academicus.

---

* Amended January 25, 1834.

"X. Those candidates who have received from the Senatus Academicus the final approbation, will be directed by the President to appear at Cambridge at such time as he may appoint, and he will then admit each of them, with the accustomed solemnities, to the degree of Doctor in Medicine. "JOSIAH QUINCY, President."

"September 22, 1831."

"NOTES.

"The Lectures for Medical Students, on the various branches mentioned in the statutes, are delivered at the Massachusetts Medical College in Boston. They commence annually on the third Wednesday in October, and continue four months.

"Students attending the Lectures of the Professor of Anatomy and Surgery are admitted to see the Surgical Practice in the Massachusetts General Hospital; and those attending the lectures of the Professor of the Theory and Practice, are admitted to see the Medical Practice in the same.

"At the private examinations, the candidates will present their certificates from the Physicians under whose care they have studied; also their tickets of admission to the several courses of medical Lectures.

"The fee for the degree of Doctor in Medicine is to be paid to the Dean. The fee is twenty-three dollars for a person who has not taken a degree of Bachelor of Arts at any College or University; eighteen dollars for one who has taken the degree of Bachelor; and thirteen for one who has taken the degree of Master of Arts. In these fees the Diploma is included." *

James Jackson asked for an Assistant Professor, and the Corporation (January 19, 1832);

"Voted, That it is expedient to appoint an Adjunct Professor of the Theory and Practice of Physic to hold the same tenure as other Pro-

* The statutes of the circular of 1834 are the same as those of 1831, with this addition in notes: "For one month after the close of the Lectures, the dissecting room of the Medical College will be open without additional fee; and those students who are entitled to attend the practice in the M. G. H. will be permitted to continue their attendance on the same." The sixth statute was altered January 24, 1834, so as to read: "He shall have attended two courses of the Lectures delivered at the Massachusetts Medical College by each of the Professors, except that if he have attended a course of similar lectures in any other College or University, then the same may take the place of one of the above courses."

fessors so long as the present Professor in that Department shall continue in office.

"Voted, That the duties and emoluments of the Professorship be divided between the Professor and Adjunct Professor in such manner as may be agreed on between them without any additional expense to the students or to the College."

It was then voted to proceed to the election of an Adjunct Professor of the Theory and Practice of Physic, when John Ware was elected.

On January 15, 1835, the Corporation voted to establish a professorship of the Principles of Surgery and of Clinical Surgery, and adopted the following statutes:

"I. The Professor in this Department shall be styled Professor of the Principles of Surgery and Clinical Surgery.

"II. The Professor shall be appointed in the same manner and shall hold his office by the same terms as other Professors in the University, and shall be subject to removal by the President and Fellows for any cause by them deemed sufficient, the Overseers consenting thereto.

"III. It shall be the duty of the Professor to give Elementary Lectures on the Principles of Surgery, and Clinical Lectures on the surgical cases in the Massachusetts General Hospital.

"IV. The same attendance on the Lectures in this Department shall be required of the Candidate for the Degree Doctor in Medicine in the University as is required on the Lectures in other Departments of the Medical Faculty."

George Hayward was then elected to the newly created office, and it was further voted that the Professor of Surgery be allowed to charge a fee of ten dollars for attendance on his lectures.* It was distinctly provided that this new Professor should have no such connection with the Professor of Anatomy and Surgery as to occupy any of his rooms at the Medical College. Warren, in his report of 1832, had stated that he was willing to give up the department of Surgery, and

* Hayward had been requested by vote of the Corporation, April 17, 1834, to deliver a course of Lectures on Surgery at the Medical School, and attendance by students was made a condition for the Degree.

also one-quarter part of his fees, provided no new Professor interfered with his arrangements in Anatomy§.

James Jackson resigned on April 21, 1836, and the Corporation expressed its regret by passing a resolution embodying this sentiment. On July 20, 1837, he was chosen Emeritus Professor of Medicine in the University, "in consideration of his faithful and valuable service as Hersey Professor of the Theory and Practice of Physic". John Ware was elected Hersey Professor, June 16, 1836, and at the same Corporation meeting a committee was appointed to consider what changes were expedient in the situation for this professorship. At the meeting of the Corporation held August 18, 1836, John Ware presented letters relating to the need of Clinical Lectures in his department. It was thereupon voted that Jacob Bigelow be appointed Lecturer in Clinical Medicine in the Medical College. His compensation was to be made up from that of the Lectures on the Theory and Practice of Physic.*

The accommodations at the Medical School were already too small to meet the requirements of the increased number of students. Warren wrote to the Committee appointed by the Corporation to investigate the needs of the Medical School:

"To Nath. Bowditch & T. W. Ward. Esqrs:—

'Gentlemen, Sometime since we were informed that you were appointed by the Corporation of Harvard University a committee on an

§ The separation of the professorships (Anatomy and Surgery) was tried at Edinburgh in 1777, but was opposed by Monro on the ground that it would interfere with his subject (Anatomy). The separation did not take place until 1831. Surgery and Anatomy were separated in 1805 at the University of Pennsylvania, and in 1810 Anatomy and Midwifery were separated at the same University. In the New York School, Midwifery was recognized as a separate branch from the start (1768).

* It is worthy of note that at this same meeting (August 18, 1836) Oliver Wendell Holmes was awarded the Boylston prize of $50, or a medal, for his essay, "How far are the external means of exploring the condition of the internal organs to be considered useful and important in medical practice?"

application of the Medical Faculty of the University for an enlargement of the accommodations in the Medical College.

"From some slight intimations it was thought that the Corporation would give some aid towards this project, if the Med. Faculty wd. on their part, obtain the subscription of a further sum from gentlemen in Boston. This having been suggested to the Med. Faculty, they were of opinion, that it wd. not be practicable to raise any considerable sum in the way proposed.

"The imperious necessity of the proposed improvements has led me, the party principally interested, to turn over the matter with the hope of accomplishing that amelioration in the department of anatomy which appears to me to be so important; the following has occurred to me:—

"Instead of making any alteration in the body of the Med. College, I propose to erect a new one story building on the unoccupied land behind the college for an anatomical room; & to convert the present dissecting room into a hall for the anatomical collection.

"A committee of the Medical Faculty have examined & approved of this plan generally; but I have not thought it proper to have any detailed plans drawn, or estimates made, until the approbation of your committee has been obtained.

"The advantages of the project are these:—The cost of these improvements will probably be not more than half of those proposed at first. The dissecting room will be removed from the interior of the College, which is highly desirable. The anatomical room will receive a number of improvements, wh. the state of the medical school renders highly important.

"In order to raise the funds I wd. propose the following scheme. Viz: That the corporation advance a certain sum such as they judge proper; & if not sufficient that the balance be made up by a loan to the department of anatomy, the interest to be deducted from the salary of said department.

"It is with extreme reluctance, Gentlemen, that I trouble you on this subject; but it does appear to me that the proposed improvements shd. take place in some way or other; & I must beg you, as the Directors of literature & science, to give it that consideration it deserves; & if the plan proposed does not meet your approbation, that you will substitute some other, such as your wisdom may judge more expedient.

"I shall be ready to enter into more exact details if you shd. be willing to give your attention to the subject.

"I have the honor to be

"Very respectfully

"Yr obedt servt, JOHN C. WARREN."

"Boston Nov 23rd. 1835."

"Perhaps I shd. have mentioned that a new dissecting room has been

established wh. has already drawn some pupils from us. This is considered by many of the profession as the first step towards the formation of a new medical school in Boston."

The Corporation authorized the Treasurer* to pay two thousand dollars towards repairing the Medical College, provided the whole expense exceeded three thousand dollars. These improvements consisted in building a new dissecting room, equal to any in the country; and in converting the old dissecting room into a handsome museum, while the old museum was made over into a dissecting room for the lectures.

An effort was made in 1836 to have the examinations for medical degrees conducted in writing. The only result of the discussion was the arrangement of the private examination, so that the examination began at three o'clock and continued until ten, and it was understood that all the members of the Faculty were to be present.

The dearth of anatomical material at this period led the Faculty to remonstrate to the Mayor and Board of Aldermen against the granting of bodies for dissection to persons other than the Medical School of Harvard University during the Lecture course in the Medical College. This bore directly on the suggestion in the last part of Warren's letter, just quoted, for then (1835) was the beginning of private medical schools in Boston, a fact to be borne in mind. Warren's lectures during his absence in Europe (1837-38) were given by Edward Reynolds, on Anatomy, and by Hayward on Operative Surgery.

On June 1, 1839, it was voted by the Medical Faculty that the Lectures continue *four months;* and in May of the following year examinations in Latin and Natural Philosophy were dispensed with, when the student could furnish a certificate of competency in those branches.

---

* Corporation Records, February, 1836.

May 29, 1841, it was voted, "That hereafter two full courses of lectures in this school be required of candidates for the Degree of Doctor in Medicine. But for one of these courses a substitute may be received in a course of lectures at any other medical institution in which the number of teachers is not less than six and in which the time occupied by lectures is not less than four months."

The students were now divided into grades. The official interpretation of a four months' course was seventeen weeks. The fee for a degree was now $20.00, and soon after (May, 1844) a *matriculation* fee of $3.00 was established. These fees were appropriated to the increase and care of the library and to repairs. Students were exempted from paying a second matriculation fee, but in 1847 it was ordered that they pay a matriculation fee each year they attended lectures.

About this time private medical schools began to flourish, and for the following thirty years were a factor in the history of the Harvard Medical School. Let us briefly consider to what state of development our School had reached before we take up the question of private schools.

In 1841 there were 118 students registered at the School. The Lectures began on the first Wednesday in November, and continued four months. The course opened with an introductory lecture, each Professor in rotation delivering this. This custom was followed for many years, and is still maintained in some schools of the country. The lectures and cost were as follows:

Anatomy and Operative Surgery, by Dr. J. C. Warren, $15.
Midwifery and Medical Jurisprudence, by Dr. W. Channing, $10.
Materia Medica, by Dr. Jacob Bigelow, $10.
Principles of Surgery and Clinical Surgery, by Dr. Geo. Hayward, $10.
Chemistry, by Dr. John W. Webster, $15.
Theory and Practice and Clinical Medicine, by Dr. John Ware and Dr. Jacob Bigelow, $15.

"The hospital and library privileges are gratuitous. The fee for the dissecting room is five dollars.

"The clinical lectures in Medicine and Surgery are given on cases in the Massachusetts General Hospital, where visits are made by the class three times a week. Surgical operations are daily growing more frequent at the hospital and the students are encouraged to witness the same.

"Lectures on Anatomy and Operative Surgery are delivered daily, and are arranged to supplement each other. The large Cabinet of Dr. Warren, lately enriched by his visit to Europe, by the addition of wax preparations to demonstrate various tumors and diseases of the skin, is used in this course. Exceptional facilities for carrying on private dissections are offered by the school, and a demonstrator of Anatomy has been added to this branch. Midwifery and Medical jurisprudence are under one Professor. Between forty-five and fifty lectures are regularly given in Midwifery, besides the lectures given in operative midwifery. The class is divided into sections, and these meet the professor in the afternoon, and as often as may be necessary, for the purpose of conference and quiz. Exercises upon the manikin are conducted to show the use of the instruments in operative cases.

"The lectures on Medical Juresprudence are confined to the statement of the principles, with illustrations by cases. The lectures on Materia Medica consist of the history of various articles used in Medicine,—their preparation, form and properties, as well as their doses and application to the treatment of disease.

"The lectures on the Principles of Surgery and Clinical Surgery continue four months during which the students visit the surgical patients and attend all the operations at the Massachusetts General Hospital. Cases recently admitted are used to demonstrate the lectures.

"The Chemical lectures continue four months, with five lectures each week. During this course several lectures are given on such parts of Natural Philosophy as are required by students who have not had a collegiate education.

"The course of the Theory and Practice of Physic embraces the lectures given at the Medical School on the general principles of Pathology and Therapeutics, and on the history and treatment of particular diseases; and the clinical lectures given at the Massachusetts General Hospital. These clinical lectures are given twice a week, and occupy two hours each.

"Each student visits patients and practices auscultation and percussion.

"The requirements for a Degree are: an age of at least 21 years, three years study of medicine, the attendance upon two full courses of lectures,—one of these at least must have been attended at this school, the other in this or in any other school which shall furnish equal opportunities for

medical education, i. e. a school in which the number of teachers is not less than six, and in which the time occupied by lectures is not less than four months. Candidates who have not had an University education shall satisfy the Faculty of Medicine in regard to their knowledge of the Latin language and experimental philosophy,—certificates of competency in this condition will be accepted in lieu of such an examination. There are two examinations annually for a degree, one on the day before the close of the winter term, and the second one week before commencement; four weeks' notice is required from those intending to apply for a degree, and a dissertation must accompany this notice."

The advertisement of the Faculty states: "Taking into view the amount of instruction given in this school, the splendid and extensive apparatus with which it is furnished, its connection with the numerous cases and operations of one of the best conducted hospitals in the United States, together with the general thorough acquisition and high respectability of its graduates, it may be doubted whether any seminary in the country offers the means of a more complete professional education, than may be obtained in the Medical School in Boston".

The extension in the time of lectures from three to four months was due to several causes. There was more or less dissatisfaction on account of the two subjects, Anatomy and Surgery, being under one professor, also because no provisions were made for an anatomical demonstrator. Conditions at Harvard were such that it was thought expedient to lengthen the course rather than to divide the professorship.

In answer to the second cause of complaint—a lack of anatomical demonstrations—it must be said that prior to this time it was contrary to law to study anatomy, hence the impropriety of having a demonstrator of that branch. It is not denied that the students had enjoyed some privileges in this line, but such privileges were from the free offering of individuals connected with the school, and, if known, were not recognized by the University. The passage of the Anatomy

Law of 1830 extended the protection of the State to the study of anatomy, and did much to extend the length of time for study at the Medical School.

Winslow Lewis, Jr., was added to the Faculty in 1831, as Demonstrator in Anatomy. The holding of regular Faculty Meetings was ordered in 1833, and it was decided that a candidate for the degree must actually attend the lectures at the school, and must first pass a satisfactory examination in natural philosophy before he could take examinations.

RIVALS.

CHAPTER XX.

RIVALS.

The Berkshire Medical Institution—once famous—was a school which calls for some consideration. I shall then deal with the subject of Private Medical Schools.

The Berkshire School was incorporated by an Act of the Legislature of Massachusetts, January 24th, 1823. It was located at Pittsfield, and was under the jurisdiction of Williams College. Now Williams College did not have charter rights to confer degrees in medicine,* and when it petitioned the Legislature for those rights (1824) it immediately encountered the opposition of the Massachusetts Medical Society. The Society contended that Williams should be governed by a Corporation similar to that of Harvard College.§ The opposition of the Medical Society had its effect finally, for we find an Act of the Legislature passed April 1, 1837, establishing a Board of Overseers, consisting of the Trustees of Williams College, the President and two Secretaries of the Massachusetts Medical Society, together with the State Senators, for the time being, from the four Western Districts. The Medical Society thereupon granted the Berkshire graduates the same rights and privileges as those enjoyed by Harvard Medical graduates. By this Act the Berkshire Medical Institution became an Independent Medical College. The

* The courts decided that the M. D., Honorary, from Williams College was invalid, as the holder did not possess the education sufficient for a degree, designating a highly qualified practitioner of medicine.

§ Williams College was under a board of trustees.

course of instruction consisted of a Lecture Term and a Reading Term.

The Lecture Term began on the first Thursday of September and continued fifteen weeks. The fee for the lectures was $40, with an additional fee of $3 for matriculation, and $1 for the use of the library. Doctors of Medicine, Fellows of the Massachusetts Medical Society, and those who had attended two full courses of Medical Lectures at an incorporated Medical School in which the usual courses of instruction were given, were admitted to the lectures gratuitously, the matriculation fee and library ticket excepted.

The Reading Term began on the second Wednesday in March, and, with an intermediate vacation of two weeks in May, continued to the last Wednesday in August. A systematic course of instructions and recitations was carried on in practical Anatomy and demonstrative Surgery during the first three months of the term, and a like course of recitations on Surgery and Obstetrics for the remainder of the term. These courses included Theory and Practice, Materia Medica and Pharmacy during the term, and Chemistry, Botany, Mineralogy and Geology, and Natural Philosophy, during parts of the term. Students attending the reading term were required to read semi-monthly a dissertation of their own composing, on some subject connected with medicine. Public examinations were held on the last day of the term.

Degrees were conferred at the close of the lecture term, and at the Commencement of Williams College. The prerequisites for a degree were: three full years of study (including the time devoted to lectures) with a regularly practicing physician, and adequate knowledge of the Latin language, attendance on two full courses of Medical Lectures, one of which must be at the Institution, and a dissertation on some medical subject which must be publicly read and defended. There was a graduation fee of $15. The Faculty of Medicine

consisted of Henry H. Childs, who was active in establishing the school, (he was elected the first Professor of the Theory and Practice of Medicine, later he was Lieutenant Governor of Massachusetts); Chester Dewey, Professor of Chemistry, Botany, Mineralogy, and Natural Philosophy; John D. Wells,* Professor of Anatomy and Surgery at Bowdoin College, who was Lecturer on Anatomy and Physiology; John Delamater, Professor of Pharmacy, Materia Medica and Obstetrics; and Stephen W. Williams, Professor of Medical Jurisprudence. In 1826-27 John P. Batchelder* joined the Faculty as Professor of the Principles and Practice of Surgery, and Thomas Goodsell took the place vacated by Delamater. The first class at this school numbered 84. The economical rate of living at Pittsfield (board, including washing, lodging and room-rent $1.75 per week), together with the recognized ability of Childs as a teacher, gave this school decided prestige. It was helped along by the growing dissatisfaction with the organization of the Massachusetts Medical Society, a feeling that crystallized later into open hostility.

With conditions and a medical course, such as I have described, contending in rivalry, it was but natural that the Harvard Medical School should lose many prospective pupils who were attracted to the Pittsfield School. This situation is shown by the accompanying table for fifteen years:

	HARVARD.		BERKSHIRE.	
	Students.	Graduates.	Students.	Graduates.
1823.....	78	15	84	7
1824.....	128	17	94	23
1825.....	118	20	112	21
1826.....	110	25	104	26
1827.....	84	25	106	25
1828.....	83	20	100	28
1829.....	91	23	108	33

* Graduates of the Harvard Medical School.

	HARVARD.		BERKSHIRE.	
	Students.	Graduates.	Students.	Graduates.
1830.....	95	21	84	22
1831.....	80	23	91	24
1832.....	83	27	103	22
1833.....	82	11	104	40
1834.....	79	21	101	29
1835.....	103	20	100	40
1836.....	118	20	117	45
1837.....	87	31	73	29
1838.....	82	26	85	32
	1501	345	1566	446

The Berkshire School continued to prosper until about 1845, when the increased number of medical schools throughout the country, the greater clinical advantages afforded by schools in large cities, where private medical schools also offered the student closer association with his teachers, the rise of Thomsonianism and Homeopathy, had their effect on the School at Pittsfield. Then, too, there was the action of the Berkshire District of the Massachusetts Medical Society, which in 1846 took steps to crystallize opinions long held by many of the members. In this action they lost the moral support, at least, of the Massachusetts Medical Society toward their school. It looked like the 1811 question over again. The circular tells the story: (1846)

"To The Medical Profession of Massachusetts:

"At the semi-annual meeting of the Berkshire District of the Massachusetts Medical Society, held at Pittsfield, on Wednesday, the 11th of November, 1846, the Committee appointed to address the members of the Profession in Massachusetts, on the subject of a STATE MEDICAL SOCIETY, reported the following Circular, which was unanimously adopted, and ordered to be printed and distributed to the Profession throughout the Commonwealth:

"CIRCULAR.

"It is a subject of congratulation that the profession of medicine is largely sharing in the rapid progress of the Arts and Sciences which distinguishes the 19th. century; notwithstanding the variety of novel

forms which empiricism assumes, and the bold pretensions of exclusive systems of practice.

"The grand object of *Medical Association* is, we conceive, to contribute to this *progress*. Another, and by no means an unimportant object, is the cultivation of harmony and good feeling among the members.

"Does the present organization of the Massachusetts Medical Society fully meet these objects? We think not.

"While we entertain all proper respect for the early enactment of the Legislature, designed for the benefit of the Medical Profession, we must recognize the principle that great changes of circumstances call for corresponding changes in all human laws.

"The Massachusetts Medical Society was formed in 1781, when the population of the State was relatively small, and the number of physicians proportionally so; and when, in consequence of the sparse and scattered population of the country, the difficulty of communication between the practitioners themselves, and other adverse circumstances, the benefits of Medical Association were of necessity chiefly confined to Boston and a few large towns.

"The present organization might have been well adapted to the then existing state of the Commonwealth, and wholly inappropriate now. * * * We state a few facts.

"In the county of Berkshire there are about *one hundred* regular physicians, and of these only about *twenty* are members of the Massachusetts Medical Society.

"In some of the other counties the number of the regular Physicians exceeds that of the members in nearly the same ratio.

"It is believed that not one-half of the regular physicians in the State belong to the Massachusetts Medical Society.

"In this county, great efforts have been made, at different times, to induce Physicians to join the Society, but with very little success, as its present condition and numbers attest.

"The uniform objection urged against connecting with the Society is, that under its present organization the *burdens* of the State Society must be borne by *all*, while its *benefits* are in a great degree confined to *a few*.

"It will be remembered that, in order to be a member of a District Society, the physician must first become a fellow of the Massachusetts Medical Society; and thus the State Society, instead of cherishing the District Societies, has become the great obstacle of their success.

"We only allude to the fact that the funds, the library, and the meetings are confined to the city of Boston, and can be of little advantage to the great majority of the members.

"Without going farther into details, with which all the members are familiar, this Society deems it a duty to express its unanimous opinion

that the present organization of the Massachusetts Medical Society is radically defective, in that the District Societies are made the creatures of the State Society, and that, while this obnoxious feature is retained, it will effectually defeat all endeavors to elevate the condition of the local District Societies.

"The new plan of organization which this Society beg leave to suggest, is essentially that now in successful operation in New York, Connecticut and other States.

"By the adoption of this plan the profession in each County or District will form for themselves local County or District Societies, and the State Society will be composed of Delegates from the several local Societies.

"Thus the whole profession of the State would enjoy all the advantages of the local associations untrammelled—and with them, all the benefits that can flow from any State Medical Society.

"In accordance with these views, a Memorial, signed by *every regular* physician in the County of Berkshire, will be presented to the next legislature, praying that the *Massachusetts Medical Society may be reorganized* and in default of such reorganization, that the Profession in the County of Berkshire may be constituted a separate and distinct Medical Society, clothed with the usual powers and privileges pertaining to such bodies.

"The first of these two alternatives we should greatly prefer—believing it, as we do, to be a measure fraught with good to the whole Profession of the State.

"The Profession in the several Counties are respectfully invited to consider the matter, and, if it meet their views, to co-operate with the Profession in this County in this and all other honorable means for securing so desirable a result.

"R. W. Worthington, of Lenox,
"H. H. Childs, of Pittsfield,
"Millen Sabin, of Lenox,
"H. L. Sabin, of Williamstown."
"Selden Jennings, of Richmond,
"W. L. Fitch, of Otis,
"N. S. Babbit, of Adams,
Committee.

"Pittsfield, November 11th, 1846."

The fifteen weeks term was maintained at the Berkshire School more or less faithfully until 1849, when a Lecture Term of sixteen weeks and two Reading Terms were adopted upon the suggestion of the American Medical Association. In 1866 the course was changed so as to begin in June and continue eighteen weeks. This made it a summer school, and its *final* catalogue issued in 1867 announces that the course is thus arranged in order that "students can attend

without interfering with the autumn, winter or spring course in other colleges."

In the forty-five years of its existence, the Berkshire Medical School had in its Faculty such men as Alonzo Clark, Gilman Kimball, Willard Parker, Elisha Bartlett, Timothy Childs, J. V. C. Smith, Horatio R. Storer, B. J. Jeffries, Robert Watts, Jr., and others. It certainly was a vigorous rival for Harvard. In Boston, however, there were medical schools conducted by groups of physicians who saw in the defective system of medical education then prevailing throughout the country an opportunity for supplying some of the needs of those students who sought better things, and at the same time for adding materially to their own incomes. Let us recall the truth that the School which we know to-day was to all intents a private medical school up to the year 1869. Its degree bore the stamp of Harvard, and a prestige was thereby obtained by the graduate, but the fees from the students, excepting the graduation fee, went into the pockets of the individual teachers. The lecturers, in return, paid the expenses incurred in conducting the school. The schools to be described now were supplementary to the Harvard School, and out of them grew the "summer" and "graduate" courses of the Harvard School, which to-day are among its most important features.

PRIVATE SCHOOLS.

As early as 1827 Walter Channing advertised a course of Lectures on Midwifery. These lectures were given during the summer months.

Another course by teachers connected with the Harvard Medical School was one by John C. Warren, George Hayward and Enoch Hale, Jr. These physicians gave instruction in the various branches of medical education. They furnished books to the pupils, and had a private room where examina-

tions were frequently held. A strong attraction of this school was its facilities for dissection. The terms for the course were $100 for a year, $75 for six months, and $50 for a quarter.

"The students, in addition to the private instruction have the privilege of attending gratuitously the Medical and Surgical practice and the Surgical Operations of the Massachusetts General Hospital, and generally private surgical operations, during the period of their pupilage; and they will also have free admission to the Lectures on Anatomy and Surgery, delivered at the Medical School of Harvard University. Clinical Lectures on Surgery are occasionally given."

Another very strong and popular school was formed by the combination of Walter Channing, John Ware, George W. Otis, Jr., and Winslow Lewis, Jr. Later these men were joined by Oliver Wendell Holmes, and James Jackson. The school was organized as follows:

"Midwifery and Diseases of Women and Children, by Dr. Walter Channing.

"Physiology, Pathology, Therapeutics and Materia Medica, by Dr. John Ware.

"Principles and Practice of Surgery, by Dr. Geo. W. Otis, Jr.

"Anatomy, Human and Comparative, by Dr. Winslow Lewis, Jr."

The advertisement says, "The pupils will be admitted to the practice of the Massachusetts General Hospital, and will receive clinical lectures on the cases which they witness there. Instruction by examination or lectures will be given at intervals of the Public Lectures of the University". The fees were $100 for one year, $75 for six months, $50 for three months. A room was provided at Channing's house, Tremont Street, opposite the Tremont House. Channing was Dean of the Harvard Medial School at this time (1834).

The Tremont Street Medical School was established in Boston in 1838.* It was designed to give medical students a

* Incorporated 1850.

thorough course of instruction throughout the year. It was a private school, and had for its first corps of teachers Jacob Bigelow, on the Practice of Medicine and Materia Medica; Edward Reynolds, on Anatomy and Surgery; D. Humphreys Storer, on Midwifery and Chemistry; Oliver Wendell Holmes, on Physiology and Pathology. The rooms of the school were at 33 Tremont Row, over Burnett's apothecary store. There was also a private dissecting room in the rear of the Savings Bank on Tremont Street, near Court Street. These rooms were open to students from 6 A. M., to 10 P. M. and were furnished with plates, preparations, articles of the Materia Medica, etc. The year was divided into two terms: the summer term, from March 1 to November 1, and the winter term, from November 1 to March 1. During the winter months the exercises were held usually in the evening, and comprised examinations on the subjects of the lectures at the Harvard School. Special attention was paid to those students about to present themselves for graduation at the Harvard School. The summer course consisted of a daily recitation at 12 noon, upon the subjects on which lectures had been delivered during the regular term at the Harvard School, together with a series of lectures upon special subjects, to meet the wants of individual students. The fees for this private school were $90 for the summer term, and $10 for the winter term.

The advantages claimed for private schools were that they substituted a systematic course of instruction for the uncertain method of "reading" then extensively used; that they divided the labor of instruction among a number of teachers instead of limiting it to one, often busy, practitioner; that the student could with profit more readily select certain branches of study during different years; that the student who wished to pursue a special line, either from choice or on account of a knowledge of his deficiencies in some branch, was better supplied with material than he would be by either the appren-

ticeship plan, or by the short course offered at Harvard.* There can be little doubt that while the old method of "reading" with a busy practitioner was productive of creditable results when the student was trained to study, or was compelled by the exigencies of time to make the most of his advantages, yet in a far greater number of cases it tended to cultivate the habit of superficial observation leading to imperfect knowledge,—results which accounted for the frequent low standard of medical education in this country.

The Tremont School, as it was usually called, was a private school of the best type. Its teachers were well trained physicians who made sacrifices in order to give young men a complete course of instruction, without increasing the pecuniary burden to the student. As time went on, and conditions seemed to warrant, a larger corps of lecturers and instructors was secured. The private school rooms developed into a supplementary school to that at Harvard, and later still the school itself became the official summer course of the Harvard Medical School. This fact must not be overlooked,—that through the instrumentality of the Tremont Street Medical School a continuous course of instruction extending throughout the year was inaugurated at Harvard, first indirectly, then, through the summer course directly; and it is to the existence of this association that the adoption of a nine months course as the regular Harvard term was so long delayed, even after the Chicago Medical School had shown successfully the advisability of establishing a lengthened course upon a graded plan.†

The Tremont School did another thing for Harvard. It

* The Medical School of the University of Virginia, organized in 1825, was the only school in the country where a nine months' course prevailed. This school started with four professors, and inaugurated the recitation and demonstration method.

† The Chicago Medical College was founded in 1859, for this express purpose.

developed a group of brilliant young teachers whose services later at Harvard were conspicuous. Such teachers as Oliver Wendell Holmes, Henry J. Bigelow, Storer, Agassiz and Jeffries Wyman were among the early teachers. The course of lectures usually consisted of Anatomy: Recitations heard by Reynolds and Holmes; a course of lectures on Surgical Anatomy by Holmes, and demonstrations by a regular demonstrator; Surgery: A complete course of eighty lectures, including diseases of the eye and ear, by Reynolds; Chemistry: Recitations and instruction by Storer; Physiology and Pathology: Lectures and recitations by Holmes, including a special course on auscultation and percussion; Midwifery: Recitations by Storer, with practical instruction on the application of obstetric instruments upon the machine and model; Theory and Practice of Medicine, and Clinical Instruction, as well as Materia Medica, by Bigelow. These courses were given at the School rooms, at the Massachusetts General Hospital, the Eye and Ear Infirmary, the Dispensary, and the Children's Hospital.

The Tremont School opened in September, 1838, with seventeen pupils. With its gradual development we find its scope widening, while the corps of teachers increased. Agassiz gave lectures on Embryology and on Anatomy; Wyman on Comparative Anatomy; Gordon on Diseases of the Skin; J. B. S. Jackson on Pathological Anatomy; Henry J. Bigelow on Surgical Pathology; George A. Bethune on the Eye; and Charles T. Jackson on Chemistry. O. W. Holmes gave special instruction in Auscultation and Percussion, as well as lectures and demonstrations upon Microscopical Anatomy, making use of the achromatic microscopes and other new instruments introduced by him.

Gradually the interests of the Tremont Street School and those of the Harvard Medical School grew together, and the annual announcements of the former came to refer to the

arrangement of the course of lectures as combining the association of the two schools. The Tremont School Catalogue of 1856 thus describes the "Relations of the Tremont Medical School to the Medical School of Harvard University".

"The summer term of the Tremont Street Medical School begins at the close of the lectures of the Massachusetts Medical College and continues until the commencement of those lectures in November. The instructors are all teachers in the College, and it is their intention to carry out as far as possible the course of instruction adopted in that institution. During the summer term they will give instructions by recitation and otherwise upon the subjects on which lectures are delivered in the winter, and during the winter will hold examinations upon the public lectures of the College. The plan of instruction which is proposed for the ensuing year, and which is a modification of that which has hitherto been followed, has been selected with special reference to the courses of public lectures at the College. The connection of the two schools affords an annual system of instruction which it is believed will be of the greatest value to students, and meet the demands of the Profession for the highest grade of medical instruction."

A schedule of a course of studies covering the period of two years, and another schedule showing how the studies of both years might be combined in a one-year course, is given on page 538.

The growth of the Tremont School is best shown by comparing the number of students with those at the Harvard School during corresponding years:

		Tremont.	*Harvard.*
1838-39	attendance	17	85
1839-40	"	20	74
1840-41	"	20	88
1841-42	"	20	118
1842-43	"	20	117
1843-44	"	20	154
1844-45	"	33	157
1845-46	"	30	159
1846-47	"	44	164
1847-48	"	48	139
1848-49	"	43	129
1849-50	"	36	117
1850-51	"	48	116
1851-52	"	46	126

Another private school in Boston during the time that this system was at its height, was one conducted by H. I. Bowditch, H. G. Wiley, G. C. Shattuck, Jr., and S. Parkman. Another was by John C. Warren, John B. S. Jackson, Robert W. Hooper, and J. Mason Warren, who offered "every facility for obtaining a complete medical education".

The Boylston Medical School was incorporated by the Massachusetts Legislature in 1847. This private school was undertaken by a number of young physicians who were seeking reforms in the profession. Their standard was high, if we can judge from the statement sent out:

"The object is to give as complete a course of instruction by recitation, lectures, and practical study as can be given in this country. The instructors will spare neither time nor expense to accomplish this object. * * * It is the desire of the instructors to send out none but thorough students, and with that view they have adopted a new plan of medical study. The profession of Medicine is not an easy one to master. It requires time and the most devoted attention on the part of the student. Even three years of persevering effort is a short time for preparatory work. It is the aim of the Instructors to instil into the gentlemen of their school an ardent love for their profession, as well as to make them practically acquainted with it. Deeply impressed themselves with the importance of a wider foundation for the profession of medicine, they advise no student to enter upon it who has not acquired sufficient knowledge of the languages and natural philosophy, to enable him to take that position as a man of science which is the duty of every physician."

One must regret that the season for sowing such seed was not more propitious. The physicians conducting this School were John Bacon, Jr., Charles E. Buckingham, Edward H. Clarke, Samuel Kneeland, William Henry Thayer, John B. Walker,—all Harvard men, three of them afterwards connected with the College.* The School building was located at the corner of Essex and Washington Streets. The course

* John Bacon, A. B. 1837; M. D. 1840; Prof. Chemistry. Charles E. Buckingham, A. B. 1840; M. D. 1844; Adj. Prof. Theory and Practice of Medicine; Prof. Obstetrics and Medical Jurisprudence. Edward H. Clarke, A. B. 1841; M. D. Univ. Pa. 1846; Prof. Materia Medica; Overseer.

of study was divided into a Junior, Middle, and Senior year. This was the first New England Medical School, and one of the few in this country, offering a three years graded course. The first or Junior year was devoted to Anatomy (practical and general), Physiology and Microscopical Anatomy, Chemistry and Toxicology; the second or Middle year: Principles and Practice of Surgery, Anatomy, Obstetrics, Diseases of Women and Children, Materia Medica and Therapeutics; the third or Senior year: Pathology, Legal Medicine, Theory and Practice, thorough review of Anatomy, Physiology and Principles of Surgery, Dissections. The winter term extended from September to March, and the summer term from March to September. "During the four months of November, December, January and February, the course of instruction at the School is somewhat interrupted by the public lectures of the Harvard Medical School." The fees were $100 for each year.

The instruction was given by John Bacon, Jr., in Chemistry and Toxicology; Charles E. Buckingham in Obstetrics and Diseases of Women and Children; Edward H. Clarke in Materia Medica and Therapeutics, also in Aural Surgery; W. Henry Thayer in Pathology and Legal Medicine, also Auscultation and Percussion; Henry G. Clark in Principles and Practice of Surgery; Henry W. Williams in Principles and Practice of Medicine, and in Orthopedic Surgery; George H. Gay in Anatomy; John C. Dalton, Jr., in Physiology and Microscopy. Special courses were given by H. W. Williams on the Eye; E. H. Clarke on the Ear; H. G. Clark on Minor Surgery and Bandaging; H. I. Bowditch on Auscultation and Percussion; Joel Parker, *Royall* Professor at Law, gave lectures on Medical Jurisprudence.

The advantages of the Massachusetts General Hospital, the Marine Hospital, Durkee's Infirmary for Disease of the Skin,

The House of Industry, and the Eye and Ear Infirmary were offered by this group of teachers.

This School had its proportion of students, but it never reached the growth attained by the Tremont School. In 1854 it petitioned the Legislature for power to give regular courses, and to *grant degrees* in Medicine. The Harvard Medical Faculty opposed this petition, and the following "Reply to the Remonstrance" was sent by the Boylston School to the Legislature:

"Boston, March 31st, 1854.

"The medical schools in this Commonwealth, during the time when a license to practice was necessary, and a degree gave this license, were divided into the two classes of schools which gave degrees, and those which did not. The distinction of public and *private* has never been known among incorporated schools: and that of *larger* and *smaller* is accidental; for the schools which are largest today may very soon be smallest. At this time, however, a degree is only a *testimonial,* indicating the holder's education, but conferring no rights; and any man (or woman) may practice medicine, who can find persons to practice it upon.

"As a *practical* distinction, therefore, none exists between the two classes of schools; as an *honorary* distinction hitherto, one has existed. The medical department of the University at Cambridge (by Courtesy, of the Massachusetts Medical College) has given medical instruction and, under the corporate power of the University, has conferred degrees. The Berkshire Medical Institution is a second public incorporated school conferring degrees. The Boylston Medical School is a public incorporated institution, which has not granted degrees. It now asks to do this, by legislative authority; and after having held its place long enough to be tested by the public, it believes that it is as competent to distribute the honors as it has been to discharge the labors, of medical instruction.

"It was established for two reasons: First because its founders believed that two schools were necessary in Boston; and secondly because they believed that a system of instruction, almost universal in Europe, should be introduced into Massachusetts, and could be introduced only by a second school. It now asks additional powers, because seven years have shown these conclusions just; and that new powers, and more capital can be usefully employed.

"The Tremont School (recently incorporated) consists of the classes of professors in the Massachusetts Medical College, instructed by them in vacation. Under these circumstances it is, of course, numerous; but the Boylston Medical School carries out a system of instruction not only

unlike that of the Tremont School, but so hostile to that system, that, if founded on true principles it must, at some time, quite supersede it.

"In the present state of science, a single school, however endowed, will not most actively advance the medical profession, in a large city; but from natural and obvious causes, whatever the merit of its instructors, their zeal and success must sometimes fall below the institutions of other districts, where the stimulus is greater.

"The Boylston Medical School is self-supporting; and only asks of the Legislature to be placed on the same footing with the elder institutions, without other aid, and hopes in reasonable time, to equal them in numbers and endowments. Their petition now seeks leave to increase their growing museums to that which is said to be the present value of those owned by the Massachusetts Medical College.

"The number of physicians all admit to be too great. The Boylston School asks not to make physicians more numerous, but better. And they claim that by raising the standard, they shall not raise the number. Any great increase in the number of medical institutions, also, it believes, would injure medical education. But it is thought that their total restriction may depress it as much. The best endowed and most enlightened monopolies have always proved incumbrances. And it may perhaps be doubted, whether a healthy emulation would prove such an injury to the Massachusetts Medical College, as its friends now apprehend.

"The Boylston School cannot assent to the position implied by the remonstrants that Boston is not a great centre of medical education. It is for this purpose the natural centre of New England, and the supply schools and of Anatomical material is quite sufficient to maintain two schools without any inducement, but the love of knowledge, to entice students from one to the other. They make this statement with regard to an ample legitimate supply of bodies for dissection, as that of an ascertained fact, and beg leave to refer to the municipal authorities of Boston who will sustain it. They would take no steps which should compel the remonstrants, or themselves to infringe the anatomy law; and the suggestion in the remonstrance was the first they have known of it being likely ever to want the full respect of the profession. Were it otherwise, however, as the Boylston School, including the department of anatomy, is already, by the aid of the Legislature, in full operation, they do not see the relevancy of this argument nor that more bodies will be needed for dissection by students who will have degrees, than by those who will not have them.

"In fine, it is respectfully submitted, that the full organization of a second medical school, in Boston, with the advantage of the European system and of instruction by recitations throughout the year, will benefit medical education in New England; and that in order to benefit medical education, it is not necessary to multiply institutions, increase the number

of medical men, impoverish museum, nor disturb the sacredness of the grave.

" Charles E. Buckingham
" Edward H. Clarke
" Henry G. Clark
" Committee of the Boylston School."

This petition was favored by the legislature.

When Harvard enlarged its Faulty and adopted the plan of a continuous whole-year session, it won over Bacon, E. H. Clarke, Buckingham, and others to its teaching staff. This fact so crippled the Boylston Medical School that little is heard of it afterwards.

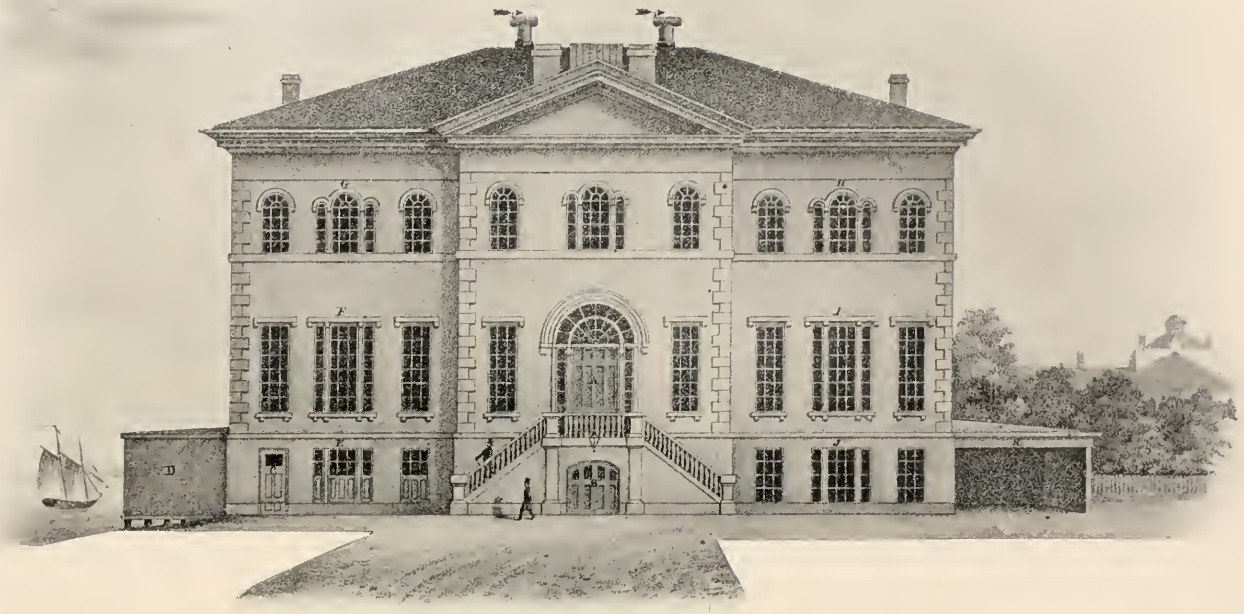
The plan upon which all these private schools was carried on demonstrated that the community was now ready for a more systematic course of medical studies than had hitherto prevailed. The establishment of Medical Schools had supplemented the old method of acquiring a medical education, and the development had gone onward. The private schools in a degree supplemented the university schools, until, in turn we find Harvard absorbing all that was best of teachers and plans, and establishing a summer course to complete its scheme, giving medical students the advantages of a whole year of continuous instruction under the same teachers. This move took place in 1857, and was an important step in Harvard's development.

NORTH GROVE STREET BUILDING,

WARREN MUSEUM,

NEW MEN, STATUTES,

1847 TO 1854.



MASSACHUSETTS MEDICAL COLLEGE, NORTH GROVE STREET.

Erected 1846.

The land upon which the building is located was the gift of Samuel Parkman. This building was occupied from 1847 to 1883. The building seen on the right in the rear is the Massachusetts General Hospital.

CHAPTER XXI.

NORTH GROVE STREET BUILDING. WARREN MUSEUM. NEW MEN. STATUTES.

1847 TO 1854.

The year 1846-47 is a landmark in the history of the Harvard Medical School. A new generation was beginning to assume control of affairs, and the last of that group of men who had carried the school forward since 1810 was to retire. At the end of 1845, with an audience of 157 students, the Faculty found sufficient reason thus to congratulate themselves:

"The Faculty are willing to consider the increased number of pupils in this Institution, which has doubled within the last five years, as an evidence that the advantages which they offer to the candidates for medical degrees are becoming appreciated by the community, and it gives them pleasure to add that they believe a greater number of teachers for the different medical schools in the United States in proportion, have been taken from their graduates than from any other medical Institution in this country. They think that they have a right to regard this as some evidence of the success of their endeavor to give a thorough course of medical instruction."

Early in 1846 (February 28) a communication to the Corporation had been received from the Medical Faculty urging the erection of a new building, and informing the Corporation that George Parkman had very generously given a lot of land on North Grove Street in Boston for the purpose. The Corporation voted April 11, 1846, to sell the Mason Street estate and use the funds for the erection of a new building for the

Medical School on the land presented by Parkman. It was further voted: *

"That in case the proceeds of the sale of the estate in Mason Street shall not be sufficient to complete the new building on Grove Street according to the plans adopted, the treasurer be, and he is, hereby authorized to spend a further sum not exceeding five thousand dollars for the purpose, provided that the Professors of the Medical School shall by a suitable instrument in writing signed by them pledge to the College such portion of the fees received by them from the Medical Students as shall be sufficient to pay the interest on said sum advanced by the Treasurer beyond the proceeds of the Mason Street estate, at the rate of 6 per centum per annum payable semi-annually until the said sum shall be reimbursed to the College Treasury.

"Voted That the Treasurer be instructed to make it one of the conditions of the sale of the Mason Street estate that the land shall not be used at any time hereafter for the purposes of a Medical School or College, or for lecturing or giving instruction in any manner or form whatsoever on any branch of Medicine, Anatomy or Surgical science or Art."

This restriction was altered July 18, 1846, so as to apply only to the building, and not to the land.

The Treasurer's report of April 3, 1847, says:

"Whereas the erection of the new Medical College has from various causes, cost more than was originally contemplated, and sundry further expenditures are yet necessary for its completion beyond the amount which has been raised from the sale of the estate on Mason Street, from subscription and the vote of the Corporation passed April 11, 1846,

"Voted, That the Treasurer be, and he is hereby, authorized to spend such further sum as may be necessary to complete the Medical School, not exceeding nine thousand dollars, provided the Professors in the Faculty of that department of the University shall obligate themselves to pay so long as they continue in office the interest on the entire sum advanced by the President and Fellows, and also a portion of the Principal sum in each year, viz, one per centum per annum for ten years, and five per centum afterwards till the entire amount advanced shall be returned, the first payment of principal and interest to be made on the first day of April, 1848; also

"Voted, That the Trustees be authorized to include in the purpose for which the above sum may be advanced the charge for incidental expenses

* See Appendix, Chapter XXII.

incurred by the Professors in consequence of the enlargement of the school not exceeding six hundred dollars."

The Mason Street estate is now used by the city for Fire Department purposes.

John C. Warren resigned on February 15th, 1847, and at a meeting of the Corporation February 27th, 1847, it was voted:

"That in accepting the resignation of Dr. J. C. Warren as Hersey Professor of Anatomy and Surgery the Board is deeply sensible of the important service rendered to the University by Dr. Warren; and hold in grateful recollection the successful exertions made by him for a period of more than forty years, and in continuance of those of his honored Father, to raise the character and promote the interests of the Medical School;

"Voted, That Dr. John C. Warren be chosen Emeritus Professor of Anatomy and Surgery in the University in consideration of his faithful and valuable services as Hersey Professor of Anatomy and Surgery."

Certain changes of importance were now brought about. At the April 3rd, 1847, meeting of the President and Fellows it was unanimously

"Voted. 1st. That the Professorship held by Dr. Hayward and now called the 'Professorship of the Institutes of Surgery and Clinical Surgery,' be called hereafter the 'Professorship of Surgery.'

"2nd. That a new Professor be chosen to be called the 'Parkman Professor of Anatomy and Physiology' to lecture at the Medical College.

"3rd. That a new Professor be chosen to be called the 'Professor of Pathological Anatomy' to lecture at the Medical College and to have charge of the Museum.

"4th. That a new Professor be chosen to be called the 'Hersey Professor of Anatomy' to lecture at Cambridge, the said Professor not to be a member of the Faculty of the Medical School in Boston.

"5th. That the compensation of the 'Parkman Professor of Anatomy and Physiology' shall be exclusively derived from fees paid by the Medical Students.

"6th. That the compensation of the 'Professor of Pathalogical Anatomy and Curator' be exclusively derived from fees paid by the Medical Students.

"7th. That the 'Hersey Professor of Anatomy' be paid the salary of

the Hersey foundation hitherto received by the Hersey Professor of Anatomy and Surgery.

"8th. That the Professors who may be elected as members of the Medical Faculty enter into the same engagements as those now in office relative to the payment of the interests and reembursement of the Principal of the sums advanced by the Corporation towards the new medical college."

The Board then proceeded to fill the newly created offices, when Oliver Wendell Holmes, was elected Parkman Professor of Anatomy and Physiology. John Barnard Swett Jackson was elected Professor of Pathological Anatomy, and Curator. Jeffries Wyman was elected Hersey Professor of Anatomy.

In September, 1847, Channing resigned the Deanship, after twenty-two years of service, and the Medical Faculty organized October 2, with Holmes as Dean. One of the last acts of Channing as Dean was to submit to the President and Fellows of Harvard College the question of admitting women to the courses, and to the examination for the degree in Medicine at the Medical School. A special meeting was called August 14, 1847, for the consideration of the question. It was voted: "That the Corporation do not deem it advisable to alter the existing regulations of the Medical School which imply that the students are exclusively of the male sex." This same question has come up many times since, and the decision of the Medical Faculty has always been in accordance with this first vote upon the question by the Corporation.

Two changes noted about this time were the discontinuance (July, 1846) of the public examination of candidates for the medical degree; and the arrangement of the courses so as to bring all lectures into the morning hours, rather than to have them distributed through the day (November 27, 1847). The fees at the Medical School at that time were: For all the courses $75; for matriculation $3; for Dissecting Ticket $5; for graduation $20.*

* In the Treasurer's Report of 1847 the Medical School appears for the first time as a part of the University. The items read as follows:

Consider the title "Massachusetts Medical College" which calls for some comment. It will not be amiss to note at the same time the question of the title of Harvard College itself, for both questions have been subjects of discussion.

In 1636 the General Court of the Colony of Massachusetts Bay agreed to give four hundred pounds towards a School or College. In March, 1638-9, it was ordered that "The College agreed upon formerly, to be built at Cambridge, shall be called Harvard College." In the Act of 1642 establishing the overseers of Harvard College the institution is repeatedly referred to as Harvard College. The Book of the General Laws and Liberties, of 1649 speaks of "*a Schoole* and a Seminary of knowledge and virtue."

In the same book (p. 191) one reads of "the master of grammar schools instructing youths so as to fit them for the University." This is probably the first use of the term university as applied to Harvard. The name "Harvard College" is invariably used when it occurs in Colonial legislation. In the provincial resolve of 1697 Harvard is called an "Academy," and in the Acts of the same body in 1707 it is designated, "That House." This last term we find still retained at some of the English colleges.

	Dr.
For paid on Contract and for building to August 31, 1846	$11,650.00
For paid on Contract and for building to August 31, 1847	$28,993.26
	$40,643.26

	Cr.
By Subscription received in 1846	$ 1,200.00
Part of amount for sale of Mason St. Estate	$ 5,000.00
Subscription received in 1847	$ 3,400.00
Balance on sale of Mason St. Estate	17,963.33
	$27,563.33
Balance August 31, 1847, Guaranteed by Professors	$13,079.93
	$40,643.26

The right of Harvard College to use the name "The University at Cambridge" was legally established by the Constitution of the Commonwealth in 1780. The 5th chapter of this Constitution in which the designation is used was prepared by the Corporation of the College and submitted to a committee of the Convention. In the Statutes of June 25th, 1789, the term University is used exclusively. We find, however, some of the earlier presidents making use of the term "University" as well as claiming the prerogatives of a University for Harvard. President Increase Mather in his address of 1692 says: "The General Court of Massachusetts, the Governor's Council, the people of New England, have named and established Harvard College as a University, with the authority to confer degrees, in the manner of the English Universities." In the "Magnalia" of Cotton Mather (1702) the title of the fourth book is "An Account of the University of New England." On the diplomas of 1752, 1764, 1775 and 1779 the heading is "*Senatus Academiae Cantabrigiensis in Novanglia.*" On the 1764 diploma the words "*Antedictae Academiae Harvardianae*" occur casually; and in the diploma of 1779 the Corporation are mentioned as "*Praeses et Socii Collegii Harvardianae.*" The 1752 and the 1775 diplomas do not contain the words *Collegium Harvardianum* nor *Academia Harvardiana.* Benjamin Franklin's diploma for the degree A. M. in 1753 is in the name of "*Academia Cantabrigiensis in Novanglia,*" without any other designation.

After the adoption of the Constitution, 1780, the heading on the diploma was "*Senatus Universitatus Harvardianae Cantabrigiensis in Republica Massachusettensi,*" without any reference to *Collegium Harvardianum.* The University at this time consisted of but one school, the Academic or "School of Arts." The term University as acquired from this constitution does not seem to have established a legal standing;

hence it is not used in documents requiring the corporate name for their validity.

The Medical School founded two years after that 1780 date is invariably mentioned as the Medical Institution of Harvard College, although references are found, especially in the newspapers of the period, to the Medical School of Harvard College or of Harvard University, and to the Boston Medical School.

Engraved blanks for honorary degrees during President Kirkland's administration read "*Senatus Universitatus Cantabrigiensis;*" and the Corporation are called "*Praeses et Socii Universitates Cantabrigiensis.*" From Kirkland's time the different presidents in their reports used different terms. Kirkland and Quincy say "Harvard University." Sparks, Felton, Walker, and Hill say "Harvard College." The title pages of the catalogue also show the same variation. Sparks alone adheres constantly to the term "College"; and the others have "Harvard University," and "The University at (or in) Cambridge."

An official pamphlet published in 1812 is called "The Constitution of the University at Cambridge," while the various additions to the laws down to 1820 inclusive are called the "Laws of Harvard College." Since 1825 they are called "The Statutes and Laws of the University in Cambridge, Massachusetts."

In the medical catalogues 1818 and 1819 the Medical School is styled The Massachusetts Medical College of Harvard University. This title prevailed until the catalogue of 1858-59, which has on the title page "Harvard University, Medical Department, Catalogue of Students attending the Winter Sessions." From 1867 it reads * * * "Annual Catalogue of the Medical School (Boston) of Harvard University." This form was continued until 1896 when the present form was adopted: "Harvard University, The Medical School."

As stated on another page, the name Massachusetts Medical College originated from the fact of the State Legislature granting money towards the erection of the Mason Street building. We find the name retained after the School moved into its North Grove Street building; and that was the legal title used during the Webster trial. In 1858 they considered seriously whether the School should not be named in honor of James Jackson, but the Corporation decided that his memory would be as appropriately observed by the establishment of a Professorship in Clinical Medicine.* That year (1858) corresponds with the introduction of "Medical Department of Harvard University" in designating the School. It soon became such officially and has so remained.

The Faculty consisted of Channing, Bigelow, Hayward, Webster, Ware, J. B. S. Jackson and Holmes; Holmes was Dean.

The Warren Anatomical Museum was established by the Corporation December 27th, 1847, as follows:

"The Corporation receive with great sensibility this new and distinguished proof of the enlightened interest taken by Dr. Warren in the prosperity of the Medical College. They accept with gratitude his munificent donations, on the conditions proposed in his letter to the President, of the 16th Inst., and would also recommend to the Overseers to give effect to the same in appointing the Committee of Examination.

"Voted that in commemoration of the liberality evinced by Dr. Warren in this donation and of the zealous, long-continued and faithful services of himself and his father for the promotion of medical education, the collection of Anatomical preparations now presented by Dr. Warren to the President and Fellows be known and designated as the 'Warren Anatomical Museum,' and that this name be placed in gilt letters over the door of entrance to the museum." †

Early in 1848 Hayward asked to be relieved, on account of ill health, from his duties as Lecturer on Clinical Surgery at the Massachusetts General Hospital. At this time the Medical Faculty asked the Corporation of Harvard to appoint or

* See Appendix, Chapter XXII.

† See Appendix, Chapter XXI.

authorize the surgeons at the Hospital to give clinical lectures to the medical class. Each surgeon in rotation, beginning with the senior, was to be appointed for the term of one year only. The result of this request was an action by the Corporation (October 28, 1848) defining the duties of the Hersey Professors. Thus:

"First, that the Hersey Professor of Anatomy be required to give all the instruction on medical subjects which has heretofore been given by both the Hersey Professors to undergraduates.

"Second, that the Hersey Professor of Theory and Practice of Physic be discharged from the duty of delivering lectures to undergraduates at Cambridge.

"Third, that the salary of the Hersey Professor of Theory and Practice of Physic be at the rate of three hundred and thirty-three and 33/100 dollars per annum."

Hayward resigned, March 31, 1849, his Professorship of Surgery, and on April 28, 1849, Henry J. Bigelow was elected to the place. That action of the Corporation, just mentioned, opened the question of the financial relationship between the University and the Medical School. Let me elucidate:

The Corporation ordered* a new medical diploma to be written and engraved. The bill went to the Medical Faculty. To this the Faculty objected, and asked "that in future no expense may be assessed upon them in regard to the necessity of which they have not been first consulted". The Corporation, placed in a weak position, replied at some length, setting forth the right it had over the finances of the several departments of the College, and asserting that the Faculty of a School or a Department had only such powers as the Corporation choose to bestow,—the Corporation being subject only to the Overseers. Thus they dodged the contention of the Faculty.

The Erving Professor was now to be freed from giving instruction to undergraduates, and was to receive one thousand dollars for his other services. Upon the election (De-

* December 18th, 1848, Corporation meeting.

cember 30, 1850) of Josiah Parsons Cook as Erving Professor of Chemistry and Mineralogy, it was stipulated "That he shall reside in Cambridge and be a member of the College Faculty, and that he shall give the Lectures in the Medical College at Boston and all the instruction required in Chemistry, Mineralogy and Geology to the undergraduates, and perform such other duties as may from time to time be assigned to him by the Corporation not inconsistent with the duties of the office". Cook's salary was fixed at twelve hundred dollars and he paid the expenses of his lectures except for fuel in Cambridge. That dispute over the disposition of the funds, which the Medical Faculty believed rightly belonged to the Medical School, was finally answered by the Corporation in the following comprehensive report:

"July 31, 1858.

"The undersigned, a Committee to whom was referred a communication from Dr. H. J. Bigelow, and a statement of Dr. James Jackson relating to the appropriating of funds for the support of Professors of Physic and Anatomy, Physic and Surgery, and of Chemistry, have considered the matter submitted to them and report:

"That the first donation was that of Dr. Ezekiel Hersey of Hingham in 1772 of £1,000, the interest to be appropriated towards the support of a Professor of Anatomy & Physic. The widow of Dr. Hersey, Mrs. Sarah Derby, in 1790, bequeathed the sum of $3,353.59 to the support of the same Professor.

"The donation of Dr. Hersey is the only one which preceded the establishment of the Medical School in 1782.

"The legacy of Dr. Abner Hersey of Barnstable in 1794 & 1795 was of £500 'for the encouragement & support of a Professor of Physic & Surgery.'

"In 1792 the legacy of John Cuming of Concord gave £400, the income of which was for "the Professor of Physic."

"In 1812 Esther Sprague gave $2,000 'toward the support of the Professor of the Theory & Practice of Physic.'

"In 1794 Major William Erving gave $1,000 'for the sole use & purpose of enlarging the salary of the Professor upon Chemistry.'

"When the Medical School was established in 1782, in addition to the Professorship of Anatomy & Surgery, & the Theory & Practice of Physic, a Professorship was founded of Chemistry & Materia Medica.

"It appears that before the establishment of the Medical School, the

only instruction given in the University, having any relation to Medical Science was given to undergraduates. Upon the establishment of that School provision was made for the instruction of undergraduates of the two upper classes, as well as of graduates & others, in the various branches of medical science; and the fees charged to graduates & undergraduates were to be only one-half as large as those charged to other persons.

"When the Medical School was removed to Boston, by the desire and at the request of the Medical professors, great care was taken that the advantages which the undergraduates had enjoyed of attending medical lectures, and receiving instruction in Anatomy, Physic & Chemsitry, should not be impaired, and express provision was made that courses of lectures should still be delivered to them by the medical professors. In the department of chemistry especially the instruction given in the academical course at Cambridge was made the principal, and the instruction in the medical school the subordinate duty of the Professor.

"The legacy of Dr. Ezekiel Hersey, by the accumulation of interest has increased from $3,333.33, its original amount, to $7,952, and the whole amount of the two Hersey donations with those of Sarah Derby, Esther Sprague and John Cuming, is now $16,677.13, producing an annual income of $827.61; of this income $333.33 have been paid to the Hersey Professor of the Theory & Practice of Physic who formerly lectured to the undergraduates as well as in the Medical School but for the last few years only in the Medical School; and the remainder $494.28 toward the salary of the Hersey Professor of Anatomy, whose lectures are delivered at Cambridge to the undergraduates, and to the members of the Scientific School, and to such members of the Medical School as choose to attend them.

"The income of the Erving donation amounting only to the sum of $166.66 is paid to the Erving Professor of Chemistry & Mineralogy, whose instructions are given at Cambridge exclusively, & chiefly to the undergraduates, and to the members of the Scientific School, though they are open to students in the other departments of the University.

"The claim is made that the income of these funds should be appropriated exclusively to the use of the Medical School. The disposition which is now made of them has been made by the Corporation in pursuance of arrangements which have had at every stage the approbation of the Medical Faculty of the University. & the consent of the incumbants of the Professorships especially concerned in them & indeed have generally been made at their suggestion.

"We do not therefore believe that there is any reason which makes a change of the existing arrangements necessary or proper at the present time.

"In the first place we cannot see that there is any misapplication of trust funds, or disregard of the will of the donors of those funds.

"The legacy of Maj. Erving has nothing connected with it to indicate an intention that it should not be applied to instruction in the science of chemistry at such a stage in the cause of education at the University as might seem expedient to the Corporation. Instruction in that science is now regarded as a necessary and important part of academical education, & could not be properly dispensed with in the Academic course. At the time the donation was made, the principle instruction given by the Professor was given to undergraduates: and we think it is important to the best interests of the Medical School, as to the general welfare of the University that it should be continued.

"The other funds were undoubtedly given to promote medical education, as a matter of distinctive professional training. But the amount of the funds is wholly inadequate to the support even of a single Professor. They are appropriated towards the support of two Professors, not merely in teaching subjects which are literally within the terms of the bequest, but one of them exclusively devoted to the medical school, and the other accessible to medical students, as well as giving instruction and developing tasts in the University, which are clearly of great practical benefit to that special department. while they extend the range of academic culture.

"We do not suppose that in consenting to the removal of the Medical School to Boston (a measure which was adopted partly to suit the personal convenience of the Medical Professors, but chiefly to increase the usefulness of the School by affording greater facilities for clinical instruction and dissection) it was ever intended to separate from Cambridge everything pertaining to medical education. The whole proceedings of the Corporation and of the Medical Faculty at the time of the removal and ever since show the contrary.

"Special and thorough instruction in comparative anatomy and physiology and in chemistry is now given by the resident Professors at Cambridge. Students in the Medical School have the benefit of this instruction, if they choose to avail themselves of it; students in the Scientific School make it a special department of study, as is not uncommonly the case in medical institutions, where particular branches of study are pursued by students who are not candidates for a medical degree. The attention given to these sciences by undergraduates, while it is proper as a part of a large and liberal education, has a strong tendency to turn their minds toward the medical profession and gives them a desirable preparation for the further prosecution of medical studies.

"The existing arrangements are such as cannot easily or conveniently be disturbed, and we are inclined to the opinion that it would not be wise to change them, if no obstacles were in the way.

"(Signed) JAMES WALKER } Committee."
E. R. HOAR }

It was further voted by the Corporation, July 31, 1858:

"That the Treasurer be authorized to receive payment of the debt due from the Medical School to the College, and thereupon to surrender the securities held by him therefore.

"2nd. That the Treasurer be authorized to receive such sum of money as has been subscribed for the benefit of the Medical School, and remains in the charge of the Medical Faculty, after the payment of the debt to the College above named, and to invest the same with the funds of the College upon the terms following, namely:—That interest upon the same at the rate of 5% per annum be allowed and paid for the exclusive benefit of the Medical School in such manner as the Medical Faculty shall from time to time vote and determine, and that the principal shall be paid in like manner at any time upon six months' notice."

E. N. Horsford was appointed (Dec. 29, 1849) Lecturer on Chemistry at the Medical School in the absence of the Erving Professor during that term. Webster resigned July 10, 1850, and Josiah Parsons Cooke was chosen (Dec. 30, 1850) Erving Professor of Chemistry and Mineralogy. The next changes in the Faculty were the election (Aug. 27, 1853) of Morrill Wyman as Adjunct Professor to Ware; the resignation of Channing, and the election in his place, September 9, 1854, of David Humphreys Storer as Professor of Obstetrics and Medical Jurisprudence; and the resignation, December 30, 1854, of Jacob Bigelow as Professor of Materia Medica in the University and Lecturer in Clinical Medicine, "which I hold by a separate vote of the Corporation". At this same meeting (December 30, 1854) Edward Hammond Clarke was elected Professor of Materia Medica, and it was voted that a Professorship of Clinical Medicine be established in place of the present Lectureship.* George Cheyne Shattuck was thereupon elected Professor of Clinical Medicine.

O. W. Holmes resigned March 26, 1853, his Deanship of the Medical School, and J. B. S. Jackson was elected to that

* The Professorship of Clinical Medicine, created for James Jackson in 1810, had never been abolished, but was allowed to become a Lectureship when Jackson was elected Hersey Professor in 1812.

office. The commotion occasioned at this period (1850) by the admission of colored students to the school, as well as by a vote of the Corporation "that this Board, if the Medical Faculty deem it expedient, perceive no objection arising from the Statutes of the Medical School to admitting female students to their lectures, expressing hereby no opinion as to the claim of such students to a medical degree" was settled by one Harriot K. Hunt's withdrawing her request for the admission of women to Medical Lectures. The faculty, however, refused their consent to a protest of the students against colored men.*

The title "Professorship of Pathological Anatomy" was changed (October 15, 1853) to "The Shattuck Professorship of Morbid Anatomy". This was in consequence of the following bequest:

"Boston, Aug. 30, 1853.

"Hon. Samuel A. Eliot,

"Treasurer Harvard University:

"My dear Sir: Through you I beg leave to offer to the Trustees for their acceptance seven shares of the Stark Mills at Manchester, N. H., and seven shares in the Atlantic Cotton Mills at Lawrence, Mass., as a contribution towards sustaining the Chair of Pathological Anatomy in the Massachusetts Medical College, an appendage of Harvard University, nevertheless on the following conditions. That the income only on said shares be paid to the encumbant as received, and in case of vacancy the income during the vacancy be added to the principal to increase the salary of the Professor, also that the Trustees have the approbation of the contributor to change the investment provided the financial committee deem a change expedient or for a more equable salary to the incumbent.

"That Harvard may ever come up to the wants of the people by furnishing the means for their instruction is the earnest desire of her humble well-wisher.

"(Signed) GEO. C. SHATTUCK."

"Voted. That the Corporation receive with grateful respect this donation from a valued member of a profession of such importance in the community, and responding cordially to the wishes of the giver will

* The first two colored medical students were admitted in 1850. These two were destined for missionary work in Liberia.

Geo. B. Shattuck

A. B. 1831; A. M.; M. D. 1835.
Professor Clinical Medicine 1855-1859
Hersey Professor Theory and Practice 1859-1874.
Dean of Medical School 1864-1869.

carefully endeavor to conform to his views in maintaining the Professorship.

"They look with peculiar satisfaction at this donation from one who has attained so prominent a position in his profession and who is an honored alumnus of another college."

Here is the interesting manner of deciding upon medical degrees, as late as 1854. The Professors assembled in the Museum, and seven candidates were introduced, one for each Professor. After an examination of *five minutes,* at a given signal, every candidate moved on to the next Professor, and so on until each applicant had been examined in every department. A five minutes examination on his dissertation followed. Then a ballot was taken, three negative votes rejected, —the vote of rejection being subject to revision on the motion of any Professor. A rejected candidate could not be examined until the next semi-annual examination.

Early in 1854 (Jan. 21) the Corporation voted: That hereafter no person shall receive the diploma of Doctor in Medicine until it has been approved by the Overseers of the College, and that this vote be communicated to the Dean of the Medical Faculty. A committee was appointed to devise and report a suitable method of conferring Medical Degrees in due form upon those entitled to them at the close of Medical lectures each year. At the next meeting (January 28, 1854) of the Medical Faculty it was recommended that "the two examinations now held be dispensed with, and that an annual examination be held at or near the termination of the course of Lectures to which all candidates shall be admitted who have studied three years, or who, being graduated at a college in good standing, will have completed three years from the time of their graduation at the next Commencement, provided they bring evidence of having attended while undergraduates, satisfactory courses of instruction in Anatomy and Physiology, and in Chemistry". A discussion of the expedi-

ency of abolishing oral examinations and substituting printed questions requiring written answers was referred to a committee instructed to revise the statutes of the Medical School. The manner of granting degrees was accordingly adopted to follow this plan:—

The President was to confer the Degrees at the Medical College in Boston in the presence of the Corporation and Board of Overseers, and the Medical Faculty. The Professors were to hold a meeting for this purpose as early as possible after the Degrees had been voted by the Corporation and Overseers, at which meeting one of the Medical Professors, selected for the purpose, was to deliver an address to the candidates. These exercises were to be public.

This programme was carried out in March, 1855, for the first time, and was as follows:

"1. A prayer—with the approbation of President Walker.

"2. Selection from Dissertations by the Graduates, time limit three-quarters of an hour.

"3. Address by Professor Cooke (Prof. Storer having declined), time limit, one-half hour.

"4. Degrees conferred by President Walker. (Thirty-three graduates.)

"5. Benediction, with the approbation of the President."

New statutes were adopted in 1854. Among the changes was the institution of a *single* examination for the Degree, in March of each year. These statutes were revised in January, 1856, and the plan of holding two meetings each year for the purpose of examining candidates was adopted, while three years of study under a regular practitioner of medicine were required. Morbid Anatomy and Clinical Medicine were added to the requirements for a degree. Both sets of Statutes follow:

—1854—

"Rules and Statutes of the Medical School in Harvard University.

"Article I. The Faculty of Medicine of this University shall consist of the President, and of the Professors and Lecturers authorized to give instruction to the Medical Students.

"The Faculty shall always have a Dean elected by themselves for such periods as they may think proper, and may also adopt rules for their own government, provided that the same do not in any respect contravene the laws of the University.

"Article II. Students of Medicine designing to attend the Medical Lectures or any of them, shall be matriculated in the University by entering their names with the Dean of the Faculty of Medicine, to be enrolled by him, and by signing an obligation to submit to the laws of the University, and to the direction of the Faculty of Medicine.

"Article III. There shall be holden by the Faculty an annual meeting for the purpose of examining candidates for the degree of Doctor of Medicine. This should be holden in the Massachusetts Medical College unless otherwise specially ordered. It may be continued by adjournment, by vote of the members present, and if only one member attend at the time and place designated he may adjourn the meeting from day to day till three members of the Faculty may attend the meeting. Three members of the Faculty must be present at every examination.

"Article IV. The annual meeting for examination shall be holden on the day next succeeding that on which the Winter course of Medical Lectures shall terminate, at ten o'clock A. M. In extraordinary cases the Faculty may hold meetings for examinations at other periods.

"Article V. Every candidate for the degree of Doctor in Medicine must comply with the following conditions before being admitted to examinations, viz.:

"1st. He shall satisfy the Faculty that he has arrived at the age of twenty-one.

"2nd. He shall have attended two courses of Lectures delivered at the Massachusetts Medical College by each of the Professors; except that he have attended a course of similar lectures in any other College or University the same may take place of one of the above courses.

"3rd. He shall have employed three years in his professional study under the direction of a regular practitioner of medicine except that Graduates of College in good standing who will have completed three years of study from the time of their Graduation at the next annual Commencement, may be admitted to examinations, provided they bring evidence of having attended, while undergraduates, satisfactory courses of instruction in Anatomy, Physiology, and Chemistry.

"4th. If he has not received a University education he shall satisfy the Faculty of Medicine in respect to his knowledge of the Latin language and experimental philosophy.

"5th. He shall, four weeks previous to the day on which he presents himself for examination, have given notice of his intention to the Dean of the Faculty, and at the same time shall have delivered or transmitted

to the Dean a dissertation written by himself on some subject connected with medicine.

"Article VI. Every dissertation shall be submitted by the Dean to the examination of the Faculty in the mode which they shall point out.

"Article VII. At a meeting for examinations, the Faculty shall examine all those candidates who shall present themselves after having complied with the conditions enumerated in the fifth of these statutes upon the following branches of medical science, namely: Anatomy, Physiology, Chemistry, Materia Medica, Pharmacy, Surgery, and the Theory and Practice of Medicine. A decision in respect to each candidate shall be determined by the vote of the major part of the members of the Faculty present at the examination of the same, and their decision, if favorable to the candidate, shall be recorded by the Dean. In the decision to be made at these meetings regard should be had to the dissertation as well as to the examination.

"Article VIII. At the close of the examination the Faculty shall decide in respect to each candidate whether he shall be recommended as worthy of the degree for which he has applied. The decision of the Faculty in respect to all these candidates, whom they do so recommend, shall be recorded by the Dean, and shall by him be certified to the President, to be laid before the Senatus Academicus.

"Article IX. Those candidates who have received from the Senatus Academicus the final approbation shall be admitted to the degree of Doctor in Medicine by the President of the University at a public Commencement holden at the Massachusetts Medical College on the Wednesday next succeeding the day of the examinations, on which occasion an address shall be made by one of the Medical Professors, selected for this purpose by the Medical Faculty.

"Public invitation to attend the ceremony shall be given by the Dean of the Medical Faculty to the Fellows of the Massachusetts Medical Society, to all medical students, and to every person who may take an interest in medical science.

"All which is respectfully submitted

"James Walker."

"June 3, 1854."

The foregoing Rules and Statutes were revised January 26, 1856, with the following alterations:

"Article III. To read: There shall be holden by the Faculty two meetings in each year for the purpose of examining candidates for the degree of Doctor in Medicine. These shall be holden in the Massachusetts Medical College unless otherwise specially ordered. They may be continued by adjournment, by vote of the members present, and if only one

member attend at the time and place designated he may adjourn the meeting from day to day till three members of the Faculty may attend the meeting. Three members of the Faculty must be present at every examination.

"Art. IV. To read: The first meeting for examination shall be held on the day next succeeding that on which the winter courses end. The second, on Monday next but one preceeding the Commencement in July. In extraordinary cases the Faculty may hold meetings for examination at other times.

"Art. V. 3rd condition to read: He shall have employed three years in his professional studies under the direction of a regular practitioner of medicine.

"Art. VII. To read: At the meeting . . . . . the Faculty shall examine all those candidates . . . . upon the following branches of medical science: Anatomy, Physiology, Morbid Anatomy, Chemistry, Materia Medica, Pharmacy, Surgery, Clinical Medicine, and the Theory and Practice of Medicine. A decision, etc. . . . . as well as to the examination.

"Art. IX. To read: Those candidates who have at the Spring examination received from the Senatus Academicus, etc. . . . . On which occasion an address shall be made by some one selected for this purpose by the Medical Faculty.

"Those who may be approved at the summer examination will receive their degree in Cambridge on Commencement day.

"Public invitation, etc. . . . . ."

APPENDIX, CHAPTER XXI.

WARREN MUSEUM.

"To The President of Harvard University.

"Dear Sir,—

"The Collection of Anatomical Preparations, which I have with much interest and pleasure been making since the year 1800, is now deposited in the room prepared for it in the Medical College, in Grove Street, Boston. It occupies the entire room, except about one-third of the gallery.

"My long connection with the University, my interest in its prosperity, and my desire to contribute to the improvement of medical education, led me many years since to make a provision for bequeathing it to the University; but, it having pleased Him who gave me existence to continue it to this time, I am enabled to present it during my life.

"This Collection I now propose to give to the University at Cambridge, for the use of the Medical College, together with five thousand dollars of stock in the Pittsfield and North Adams Railroad,—guaranteed

by the Western Railroad to pay an interest of six per cent., or three hundred dollars per annum, for thirty years,—on the following conditions:—

"*First,* The Collection shall be kept insured perpetually for a sum not less than ten thousand dollars. In case of loss, the sum recovered from the insurance to be applied to forming another collection for purposes similar to those for which this is intended.

"*Second,* The Preparations shall be maintained in good order, and shall be increased as fast as the income of the funds will admit; meaning, that the income shall be applied to this object after paying the insurance before named.

"*Third,* That this Anatomical Museum shall be annually inspected, as are other collections in the University, by a committee appointed for the purpose, of which one of my descendants shall be a member, provided there be such descendant residing in the vicinity and willing to attend to the duty.

"Should it please the Government of the University to accept the proposed donation with the foregoing conditions, I will cause the stock to be transferred to them on the first day of January next.

"I have the honor to be, respectfully,

"Your friend and servant,

"JOHN C. WARREN."

"*Boston, Dec.* 16, 1847."

"HISTORY OF THE ANATOMICAL COLLECTION DEPOSITED IN THE MASSACHUSETTS MEDICAL COLLEGE IN BOSTON, NOVEMBER 1ST, 1847.

"The importance of illustrating the structure of the human body by preparations displaying the different organs has been well understood in Europe for more than a century. While pursuing my medical studies in London, in the years 1799 and 1800, I learnt the mode of making these preparations, and, with the hope of aiding my predecessor in his lectures, formed a small collection, which I brought home about the end of 1802. In the beginning of these labors I had the assistance of my friend, Mr. Senter, of Newport, at that time a fellow-student in Guy's Hospital, and, with myself, the only person engaged in this way in that great institution. After a short and brilliant career, Senter died, and I purchased his collection from his heirs.

"In 1809, three years after being appointed Adjunct Professor, my predecessor in office and myself formed an Anatomical Theatre and a Dissecting-room at No. 49 Marlboro' Street. At that time being able to obtain a considerable number of subjects, I had great opportunities for prosecuting this labor, and by the year 1816, when we removed to the Medical College in Mason Street, the number of preparations was sufficient to occupy a room in that building.

"The Medical School increasing gradually, I was encouraged to purchase preparations occasionally, at the same time occupying myself, and such students as exhibited the necessary talent and industry, in increasing the collection. Some specimens belonging to the Linnæan Society, and given, on its dissolution, to Harvard College, were deposited with me for preservation. Most of these were sent to the Museum at Cambridge, but some of them I received authority to add to the Museum in the Massachusetts Medical College. In 1830 my son, Dr. J. Mason Warren, purchased in Paris preparations to the amount of two thousand dollars.

"By the year 1834, the collection had so much increased as to require additional room. On representing this to the late Treasurer, T. W. Ward, Esq., that gentleman applied to the Corporation, and it was settled, that, on my paying the sum of one thousand dollars, the Corporation would appropriate as much, for the erection of a new dissecting-room, and the arrangement of the old one for the anatomical collection.

"Soon after this, going to Europe, I made large purchases in different cities; particularly, I had specially prepared at the Hospital St. Louis a number of wax pieces, exhibiting lively representations of the small-pox, and other diseases of the skin.

"I ought not to omit to mention the names of those who have from time to time assisted in my labors. In the incipient state of the collection, great assistance was given me by Dr. William Gamage, Jr., of Cambridge, an able anatomist and learned physician. Drs. Winslow Lewis, J. Mason Warren, Jeffries Wyman, and Samuel Parkman have afforded much time and valuable aid. I am also indebted for occasional donations, among others, to Dr. James Jackson, Professors Channing, Hayward, Webster, and J. B. S. Jackson, Drs. A. L. Peirson and Winslow Lewis.

"The preparations brought home in the year 1838, and a large number purchased by Dr. J. M. Warren, at the expense of about one thousand dollars, on his second visit to Europe, increased the collection so much that it began to be an object of curiosity to medical students and others, and a desire was manifested of having the collection opened to the Medical School. President Quincy applied to me on the subject, and expressed a wish that this desire should be gratified. On investigation, however, he and other gentlemen of the Government of the University were satisfied that the exposed state of the preparations would render this objectionable, without some additional protection. But the Corporation did not think themselves justified in appropriating anything for this object. Notwithstanding the want of security to the preparations, the desire manifested by medical students to see the collection as a whole was so strong, that, some years since, I adopted the practice of admitting the Class occasionally.

"The increase in the number of students, and the defective accommodation of some of the Professors, having led to the construction of the

new College, a spacious and elegant room was appropriated to the reception of the Anatomical Cabinet, in which the collection could be fairly displayed, and sufficiently protected; thus affording the requisite means for opening the new Museum to the inspection of medical students and others interested in medical science. The preparations have been accordingly deposited there, and presented to the University for the use of the Medical School.

"JOHN C. WARREN."

"The foregoing communication from Dr. Warren having been submitted to the Corporation by the President, on the 27th December, the following resolutions were adopted by the Board:

"*Voted*, That the Corporation receive with great sensibility this new and distinguished proof of the enlightened interest taken by Dr. Warren in the prosperity of the Medical College; that they accept with gratitude his munificent donation on the conditions proposed in his letter to the President, of the 16th instant, and will also recommend to the Overseers to give effect to the same, in appointing the committees of examination.

"*Voted*, That in commemoration of the liberality evinced by Dr. Warren in this donation, and of the zealous, long-continued, and faithful services of himself and his honored father for the promotion of medical education, the collection of anatomical preparations now presented by Dr. Warren to the President and Fellows be known and designated as the 'Warren Anatomical Museum,' and that this name be placed in gold letters over the door of entrance to the Museum."

MEN AND MANNERS, CHARLES W. ELIOT,

THE SUMMER SCHOOL,

THE TEACHING STAFF THIRTY-FIVE YEARS AGO,

AN EXECUTIVE FACULTY,

THE BEGINNING OF A NEW ERA,

1855 TO 1871.

CHAPTER XXII.

MEN AND MANNERS. CHARLES W. ELIOT. THE SUMMER SCHOOL. THE TEACHING STAFF THIRTY-FIVE YEARS AGO. AN EXECUTIVE FACULTY. THE BEGINNING OF A NEW ERA.

1855 to 1871.

The Faculty made an arrangement with Henry I. Bowditch (May 25th, 1855) by which the students might be admitted for Clinical Instruction to his wards at the Massachusetts General Hospital. They also arranged with John Bacon that as microscopist of the Hospital he should make microscopic demonstrations to students of the specimens of cases which came under his notice.

Extensive repairs were begun on the Medical School Building in 1855, repairs which the College Treasurer was authorized to pay, "not exceeding $2000; provided the Faculty of the department of the University shall obligate themselves to pay so long as they continue in office the interest on the sum thus advanced by the President and Fellows, and also five percentum of the principal sum each year".

The principal changes in the workings of the School during the year 1856 and '57 were, the releasing (Sept. 27, 1856) of the Erving Professor of Chemistry, at his own request and agreeable to the wishes of the Medical Faculty, from delivering lectures at the Medical College in Boston; and the appointment (Oct. 25, 1856) of Dr. John Bacon and Mr. Charles W. Eliot* as Lecturers in Chemistry in the Medical

* Now President of the University, 1905.

School for that year. On September 27, 1856, Morrill Wyman resigned as Adjunct Hersey Professor of Theory and Practice. On November 15, 1856, Austin Flint (M.D. Harv. 1833) was appointed "to deliver such of the lectures on Theory and Practice of Medicine as may be agreed upon between him and Dr. Ware". Flint found Buffalo more attractive, and never took up his duties in Boston.

Candidates for degrees were now allowed ten minutes each for examination, their theses to make a part of said examination. A surgical conference at the Hospital was added in September, 1857.

The following letter from Thomas Lee explains itself:

"Boston, November 15, 1856.

"Dear Sir:

"I herewith hand you eleven shares of the Atlantic Cotton Mills and eleven shares of the Great Falls Manufacturing Company, which are transferred to the present Fellows of Harvard College to be held by them in full property subject to the following conditions, viz.: The income of said property to be paid as it accrues and as an addition to the present salary now received by him to Dr. Jeffries Wyman, the Hersey Professor of Anatomy, as long as he remains in office; and further also for the term of his natural life unless he shall have previously and not of his own accord, and not from infirmity have resigned said office or shall have been removed from it from some cause implying unworthiness on his part.

"After the death of said Wyman my desire is that the said fund shall remain for the support of said Professorship to be managed and the income to be appropriated therefor in such manner as the President and Fellows shall think proper.

"(Signed) THOMAS LEE."

On March 21, 1857, John Bacon was elected University Professor of Chemistry for the Medical School.

A committee was appointed by the Medical Faculty, November 21, 1857, to consider and report upon the expediency of establishing a Summer School of the Harvard Medical School. Upon the report of this Committee it was voted (Jan. 18, 1858) to request the Corporation to establish a

course of Medical Instruction during the period intervening between the winter courses of Lectures; the proposed course to be under the direction of the Medical Faculty. This the Corporation did (February 27, 1856) through the following resolution:

"That the Medical Faculty be authorized to establish a course of Medical instruction during the period intervening between the winter courses; it being understood that no change is contemplated in the amount or character of the present winter instructions nor in the requisites for a Medical degree, nor in any of the Rules and Statutes of the Medical School now in force; and that no additional pecuniary charge will be incurred by the College.

"That each Professor shall have the charge of and be responsible for the instruction in his own department during the Summer as well as during the Winter Session; with the understanding that if a Professor desires to have a Demonstrator or an Assistant during the summer session he shall be allowed to select one with the approval of the Faculty. Such Assistants standing in the same relation to the Faculty and to the University as the present demonstrator of Anatomy."

During the discussion on the question of establishing a continuous course of studies, such as it was believed the summer school would inaugurate, the practice of conducting all the examinations in writing was instituted, an early step in the direction of our present methods at the Medical School. The success of the summer school was assured financially by the generosity of Messrs. William P. Sturgis, John C. Cushing, Thomas Lee, and Jonathan Phillips, each giving five thousand dollars towards a fund for this department in the University. The fund thus created was used to liquidate the debt on the North Grove Street building. It created also the nucleus of a fund to be called the "Jackson Medical Fund." * The first session of the Summer School was begun March 15, 1858. The Catalogue of that year states:

"The Corporation of Harvard University, at the instance of the Medical Faculty, acting upon the experience of the Tremont Street School,

* See Appendix, Chapter XXII.

which has extended over a quarter of a century, have decided to introduce a similar system of instruction into the Medical Department of the University.

"Accordingly, medical instruction will hereafter be given by the Faculty during the whole year with the exception only of appropriate vacations. The summer instruction which has hitherto been given by the Tremont Street School—an institution for private medical instruction—will for the future be given by the Medical Faculty of the College under the auspices of Harvard University.

"By adopting this course—in reality extending medical instruction thro the year, a part of which will be devoted to lectures, and a part to other modes of systematic study and training—the faculty believe that they are offering to medical students the best possible method of preparing themselves for the practice of medicine and surgery, and to the medical community the best assurance that Harvard University is using its utmost endeavors to elevate the character of the Medical profession.

"This proposed method of imparting medical education, by means of lectures during one portion of the year, and of recitations and study and closest observation during the other portion, under the supervision of the same instructors, so that there may be a mutual adaptation between the lectures of the professors in winter and the studies and observations of the students during the summer, is believed to combine greater advantages for medical instruction than any other system.

"In order to carry out this plan of medical education, all the facilities which Harvard University possesses for medical education will be employed. The plan of instruction and the character of these facilities are as follows:

"Each year is divided into Two Terms or Sessions.

"During the winter session, lectures will be given as heretofore, commencing on the first Wednesday in November, in Theory and Practice of Physic, Obstetrics and Medical Jurisprudence, Anatomy and Physiology, Pathological Anatomy, Surgery, Materia Medica and Therapeutics, Chemistry, Clinical Medicine, and Clinical Surgery.

"During the Summer Term, instruction will be given by means of recitations from text books, demonstrations, etc., in all the branches just enumerated, except in Clinical Medicine and Clinical Surgery. Both the latter will be taught practically thro' the year at the Massachusetts General Hospital.

"Instruction by lectures is also given at Cambridge during the Summer Session—in Botany by Professor Gray; on Comparative Anatomy by Professor Wyman; in Zoölogy by Professor Agassiz; and in Accoustics and Optics by Professor Lovering. To these lectures students of the Summer Session of the Massachusetts Medical College will be admitted without extra charge.

"The instruction which is given during the summer will be superintended in each department by the professor who lectures in that department in the winter.

"The Faculty recommend to students constant attendance at the Hospital, and to those who are able to pass the whole three years of pupilage under their direction, the selection of certain branches during the first two years of preparation to the exclusion of others.

"Thus they advise that the first year should be mainly devoted to Anatomy and Physiology, Chemistry, Pathological Anatomy, Surgery and Dissection.

"For the second year, they advise the study of Theory and Practice, Midwifery, Diseases of Women and Children, and Medical Jurisprudence, Materia Medica and Pharmacy, Diseases of Eye and Ear, Clinical Observations at the Hospital and a continuation of Dissection.

"The Third year should be devoted to a review of these branches, or of such of them as the student finds himself to be least acquainted with. During the last year the student is supposed to know his own deficiencies and to have made a choice of the direction he is likely to follow,* and therefore to select for himself those branches which are best adapted to his wants.

"In accordance with the present arrangements the academic year of the School is divided into two sessions, viz., the winter term, extending from November to February, inclusive; and the Summer Term extending from March to October, inclusive.

"The winter Term includes the Medical Lectures at the College. Instruction by recitation is given during the Summer Term. Gentlemen who spend one or more years at the school, will have Lectures, Recitation, or Examination daily, throughout the academic year.

"The collateral reading which has been pointed out by the Faculty, will advantageously occupy all the time not required to prepare for the regular exercises of the School.

"Students who want to go over the whole ground in a single year, and propose to follow the plan arranged for that purpose, will have two, and perhaps three recitations a day. Their opportunity for collateral reading and clinical observation will, of course, be more limited than if they remained in the school a longer period.

"*The Faculty, however, cannot impress too strongly upon students the importance of not undertaking too many studies at once. Those who try to go over the whole ground in a single year, are in great danger of acquiring only a superficial knowledge of their profession.*

"The dissection room of the school is at the Massachusetts Medical College.

---

* First suggestion of specializing.

"Terms for Summer Session $100.00 without extra charge for dissection or otherwise. For the Winter Session, not including dissection, $80.00; Matriculation fee, $3; payable but once."

The number of students in this first session was, 34. The following program was advertised:

"COURSES OF THE FIRST TWO YEARS."

Month.	First year.	Second year.
	Anatomy & Physiology.2 a week	Theory & Practice.....2 a week
March	Surgery .....2 a week	Practical Anatomy
	Practical Anatomy	Hospital
	Hospital	Theory & Practice.....2 a week
April	Anatomy & Physiology.2 a week	Practical Anatomy
	Surgery .....2 a week	Hospital
	Practical Anatomy	Theory & Practice.....2 a week
	Hospital	Practical Anatomy
May	Anatomy & Physiology.2 a week	Hospital
	Surgery .....2 a week	Midwifery, &c., diseases of
	Chemistry .....2 a week	women and children.....2 a week
	Practical Anatomy	Hospital
	Hospital	Midwifery, &c.....2 a week
June	Chemistry .....2 a week	Materia Medica.....2 a week
	Hospital	Hospital
July	Chemistry .....2 a week	Vacation
	Hospital	Hospital
Aug.	Vacation	Midwifery, &c.....2 a week
	Hospital	Materia Medica.....2 a week
Sept.	Anatomy .....2 a week	Practical Anatomy
	Practical Anatomy	Hospital
	Hospital	Materia Medica.....2 a week
Oct.	Anatomy .....2 a week	Practical Anatomy
	Practical Anatomy	Hospital
	Hospital	Public Lecture
Nov.	Public Lecture	at the Mass. Med. College.
	at the Mass. Med. College.	Weekly examination on each
	Weekly examination on each	course delivered at the College
	course delivered at the College	
Dec.	Ibid	Ibid
Jan.	Ibid	Ibid
Feb.	Ibid	Ibid

"Daily visits to Hosp. 3d yr. students elect their own course of studies."

"ONE YEAR COURSE, TWO YEARS IN ONE.

March	Anatomy & Physiology.2 a week	Aug. Vacation
	Surgery & Hospital...2 a week	Hospital
	Theory & Practice....2 a week	Sept. Materia Medica.....2 a week
	Practical Anatomy	Midwifery .....2 a week
April	Anatomy & Physiology.2 a week	Anatomy
	Surgery & Hospital...2 a week	Practical Anatomy
	Theory & Practice....2 a week	Hospital
	Practical Anatomy	Oct. Materia Medica.....2 a week
May	Anatomy & Physiology.2 a week	Anatomy
	Surgery & Hospital...2 a week	Practical Anatomy
	Theory & Practice....2 a week	Hospital
	Chemistry .....2 a week	Nov. Public Lecture
	Practical Anatomy	at the Mass. Med. College.
June	Chemistry .....2 a week	Weekly examinations on each
	Midwifery, &c.....2 a week	of the courses delivered at Col-
	Hospital	lege.
July	Chemistry .....2 a week	Dec. Ibid
	Midwifery .....2 a week	Jan. Ibid
	Materia Medica.....2 a week	Feb. Ibid
	Hospital	

John Ware resigned his professorship July 31, 1858, and the Corporation in accepting the resignation (August 28, 1858) voted:

"That in accepting the resignation of Professor Ware this Board cannot refrain from expressing their regret at the serious loss which the Medical School incurs in this event.

"That the President in communicating this vote to Dr. Ware be requested to signify to him the sense entertained by this Board of the great value of his services to the University for the twenty-six years during which he has been connected with it, resulting as well from the soundness of his judgment and the excellence and weight of his character, as from his learning and professional eminence."

Arrangements were now made by which students were permitted to visit the Boston Dispensary (1858) during the continuation of the Lectures at the School. For the facilities thus afforded the School paid one hundred dollars, and later two hundred dollars to the Physicians and Surgeons of the Dispensary.

The resignation of Ware resulted in the following further changes:

George C. Shattuck resigned his professorship in Clinical Medicine, January 22, 1859, and was immediately elected Hersey Professor of Theory and Practice of Physic. Henry Ingersoll Bowditch was elected (January 22, 1859) Professor of Clinical Medicine.

The question of honoring the name of James Jackson by some appropriate memorial was considered further by both Faculty and Corporation. The former suggested that the name James Jackson be prefixed to that of the Medical School. Finally a letter signed by the Subscribers to the Medical Fund* was sent to the Corporation, suggesting that the name of James Jackson be in some way connected with the

* Josiah Quincy, Wm. Sturgis, John P. Cushing, (by Wm. Sturgis, Atty.), Thomas Lee, J. Phillips, Nathl. Thayer, Mary Pratt, H. H. Hunnewell, R. M. Mason for S. E. Mason, N. I. Bowditch for Wm. Bowditch.

Medical Department of the University, urging that they believed such a measure would be highly acceptable to the community, that it would materially assist in securing the amounts proposed to be raised by the Medical Faculty for the benefit of the Institution, and furthermore that it would be an honor justly due to Jackson for his eminent services to the College and to Medical Science, as well as a suitable expression and memorial of the public esteem which he had won by his personal and professional character; and by a long life of usefulness. This resulted in the following action by the Corporation April 30th, 1859:—

"Whereas the President and Fellows of Harvard College fully concur in the sentiments of respect for Dr. James Jackson expressed in the foregoing communication and in the opinion of the fitness and propriety of permanently connecting his name with an Institution which he has done so much to build up and make useful to the public.

"Therefore, Voted; That the Fund by the contributors whose names are given above together with such additions as shall be made to these sums, shall be called the 'Jackson Medical Fund.'

"Voted That the Professorship of Clinical Medicine, which was first filled by Dr. Jackson shall be known hereafter under the name and style of *Jackson Professorship of Clinical Medicine.*"

At the outbreak of the Civil War in 1861 the School had as a Faculty:

Thomas Hill, D. D., President; D. Humphreys Storer, Dean, Professor, Midwifery and Medical Jurisprudence; John B. S. Jackson, Professor, Pathological Anatomy; Henry I. Bowditch, Jackson Professor, Clinical Medicine; Oliver W. Holmes, Professor, Anatomy and Physiology; George C. Shattuck, Hersey Professor, Theory and Practice; John Bacon, Professor, Chemistry; Henry J. Bigelow, Professor, Surgery; Edward H. Clarke, Professor, Materia Medica.

The course of lectures was still seventeen weeks, beginning on the first Wednesday in November. After this the Summer Course began and continued up to November in the manner described above. The following schedule illustrates the daily division of time:—

"ORDER OF LECTURES, DAILY."

"Hour.	Monday.	Tuesday.	Wednesday	Thursday.	Friday.	Saturday.
9 o'clock	Shattuck (Hosp.)	Clarke	Clarke	Shattuck (Hosp.)	Clarke	Storer
10 o'clock		Shattuck	Ware		Ware	Bigelow (Hosp.)
11 o'clock	Bigelow	Jackson	Bigelow		Bigelow	
12 o'clock	Storer	Bacon	Storer	Bacon	Museum	
1 o'clock	Holmes	Holmes	Holmes	Holmes	Holmes	
4 o'clock					Shattuck (Hosp.)	

—"FEES—

"Fees for Lectures, $80.00.
"Matriculation, $3.00.
"Demonstrator's Ticket (optional), $5.00.
"Fee for Graduation, $20.00.
"Use of Library and attendance on Hospital, *Free.*"

The Medical Faculty approved the following nominations (January 27, 1860) of assistants in the Summer School: Calvin Ellis, Richard M. Hodges, Joseph F. Gould, William E. Coale, Francis Minot, and Fitch E. Oliver, (February 17, 1860). This session of the School suffered in the attendance of students on account of the War. Henry I. Bowditch, in his account of the School Alumni, says that in the summer of 1862 almost every student had left, in response to the repeated calls of the Surgeon-General for volunteers. The part these and other alumni played in the war will be reserved for record in a separate chapter.

The right to certain lots of land about the Medical School building had been more or less in dispute ever since Samuel Parkman's death in 1854. The question was settled by the President and Fellows voting (August 30, 1860) to give a deed to the Parkman heirs, disclaiming all right to land on the western side of the Medical School building on North Grove Street; also in relation to the land on the eastern side of the building.

In 1862 permission was granted, by which the Lectures at Cambridge were made available to students of the Medical School, without extra charge. Later when this privilege was made reciprocal the Medical Faculty protested, and in 1882 the President and Fellows defined explicitly the relationship between the two departments of the University, namely that the attendance upon lectures in the Medical School by undergraduates from Cambridge could not be counted as a condition for recommending a candidate for a Medical Degree.

Instruction in Chemistry was now (1862) continued through the second year course in the Summer School. It was also decided to divide the classes into sections in order that the facilities at the Hospital and Dispensary might be made more available,—one third of the class to attend the Hospital, "east wing"; one third the Hospital "west wing"; one third the Dispensary, on Mondays. These sections were to interchange on Wednesdays, and again on Fridays, thus giving each section a visit to the two wings of the Hospital as well as to the dispensary each week. Henry I. Bowditch was to give a Clinical Lecture of about half an hour's duration on Mondays, Wednesdays and Fridays.

In 1863 the weekly clinical conference, which had been established under G. C. Shattuck, was transferred to Bowditch. The University Lectures were reëstablished this year, and O. W. Holmes was requested by the Faculty to give a course of Lectures on the microscope.

On April 23rd, 1863, Calvin Ellis was elected Adjunct Professor of Theory and Practice. On October 10th, 1863, George Hayward died; "A child of the College, he was loyal to its interests throughout life. In his prime he was a faithful Professor in one of its departments of instruction, and in his later years he brought to its service in the Board an affectionate zeal, prudent counsel, and a large and varied knowledge of men and affairs."

The Corporation voted (June 11, 1864) to establish in the Medical School a Professorship of the Physiology and Pathology of the Nervous System, the duties of the Professor "to be such as may be determined from time to time, and the compensation of the Professor to be derived from fees." Charles E. Brown-Séquard was chosen for the chair. Upon the resignation of Storer as Dean (September 12, 1864) G. C. Shattuck was elected to that office.

The newly opened City Hospital was offered to the School, in 1864, as a place of instruction for medical students.

By a vote of the Corporation, October 20, 1865, Calvin Ellis was transferred as Adjunct Professor from the Department of Theory and Practice to that of Clinical Medicine, and Edward Buckingham was elected Adjunct Professor of Theory and Practice. This change was made because the Corporation thought it inadvisable to have two Adjunct Professors in one department and none in other departments.

Many changes now resulted. The Faculty were anxious to obtain the endowment from the Hersey Professorship, "which this Faculty have always maintained was intended for the Medical School rather than for the College." With this end in view it was suggested that Jeffries Wyman, incumbent of the Hersey Professorship of Anatomy since its separation from the Medical School in 1847, be elected a member of the Medical Faculty. It was voted by the Corporation on January 20, 1866, that "Professor Wyman be added to the Medical Faculty, and that he be permitted to deliver annually a course of lectures at the Medical School in Boston." Thus the question was again deferred, but not settled. At this same meeting of the President and Fellows, Josiah Stickney Lombard was chosen Assistant Professor of Physiology in the Medical School, and it was then stipulated that "when an Adjunct Professor is hereafter appointed his term of office shall be considered as closing with that of his

professor." On January 27, 1866, Richard M. Hodges was chosen Adjunct Professor of Surgery; on February 24, 1866, James C. White was chosen Adjunct Professor of Chemistry; and on May 26, 1866, David W. Cheever was chosen Assistant Professor of Anatomy. The examination of a patient by a student in the presence of the Professor or his Assistant, and a written statement of the diagnosis of the case, was thought sufficient examination in the Clinical Department.

In 1866 the ever-recurring question of fees was considered by the Medical Schools of Philadelphia, New York, Brooklyn, and Boston, and it was mutually agreed that the fees should be raised. At the Harvard School there were now nine departments in which instruction was given during the winter term: (1) Anatomy and Physiology, (2) Surgery, (3) Chemistry, (4) Theory and Practice of Physic, (5) Midwifery and Medical Jurisprudence, (6) Materia Medica, (7) Physiology and Pathology of the Nervous System, (8) Clinical Medicine, and (9) Pathological Anatomy. The aggregate fees of these departments amounted to ninety-five dollars for each student attending a full course of lectures. It was voted to raise the fees to one hundred and twenty dollars, distributed as follows: Anatomy and Physiology, $18; Surgery and Clinical Surgery, $18; Chemistry, $18; Theory and Practice, $12; Midwifery and Medical Jurisprudence, $12; Materia Medica, $12; Clinical Medicine, $12; Physiology and Pathology, Nervous System, $12; Pathological Anatomy, $6. Total, $120.

On account of the continued absence from the country of Brown-Séquard, it was arranged that in the event of his not returning the price of tickets in the separate departments be as follows: Anatomy and Physiology, $20; Surgery, $20; Chemistry, $20; Theory and Practice, $15; Midwifery and Medical Jurisprudence, $15; Materia Medica, $12; Clinical Medicine, $12; Pathological Anatomy, $6. Total, $120.

The excess of the new rates over the old was to be paid into a contingent fund. This contingent fund was to be assessed for the current expenses of the School in the same way as the fees of each department are now assessed, and the remainder, after this amount was withdrawn, was to be divided among the teachers according to a vote of the Faculty, it being optional whether the whole or a part should be appropriated for the current expenses. In the Summer School the fees were fixed at fifty dollars for those attending the Spring term only; seventy-five dollars for Spring and Summer students; thirty dollars for the Autumn students. The fee for the three terms to be one hundred dollars. However, a student could take a ticket for one month, for which the fee was twenty dollars. The title Assistant in a Department was now changed to Instructor (September 17, 1866).

The use of the microscope was receiving more attention. To supplement the lectures given by O. W. Holmes, there was a small room fitted up by Calvin Ellis, where a separate laboratory was established. There the student might study normal and pathological histology far better than in any other school in the country. Ellis was assisted by Dean. Many students of the North Grove Street School remember this little room in the basement of the building and to the left of the steps as one entered. The two branches, Histology and Pathology, remained united under the same teachers until about 1882. Students also had the advantage of J. C. White's clinic on Diseases of the Skin at the Out-patient Department of the Massachusetts General Hospital.

The organization of the School at the close of the Civil War was as follows:

COURSE OF INSTRUCTION FOR THE YEAR 1865-66.

LECTURE TERM, NOV. 1, 1865, TO FEB. 28, 1866.

LECTURES.

Anatomy and Physiology, Professor Holmes, Monday, Tuesday, Wednesday, Thursday and Friday, at 1 o'clock.

Surgery, Professor Bigelow, Monday, Tuesday and Thursday, at 11 o'clock, at the Medical College; Saturday at 10 o'clock, at the Massachusetts General Hospital.

Obstetrics, Professor Storer, Monday at 10 o'clock; Wednesday and Friday, at 12 o'clock.

Pathological Anatomy, Professor Jackson, Monday at 12 o'clock; Tuesday, at 9 o'clock.

Chemistry, Professor Bacon, at the Massachusetts Medical College. Tuesday and Thursday, at 12 o'clock.

Materia Medica, Professor Clarke, Monday at 9 o'clock; Tuesday and Saturday, at 8 o'clock.

Clinical Medicine, Professors Bowditch and Ellis, at the Massachusetts General Hospital, Monday and Thursday at 8 o'clock, and Tuesday at 4 o'clock; at the Massachusetts Medical College, Thursday at 10 o'clock, and Saturday at 9 o'clock.

Theory and Practice of Physic, Professors Shattuck and Buckingham, Tuesday at 10 o'clock, and Wednesday at 3½ o'clock; Monday at 4 o'clock, at the Massachusetts Medical College; Monday and Thursday at 8 o'clock, at the Massachusetts General Hospital; Friday, at 10 o'clock, at the City Hospital.

RECITATIONS.

Anatomy, Dr. D. W. Cheever, Monday and Thursday at 5 o'clock; Wednesday and Friday, at 5 o'clock, at the Dissecting-room.

Clinical Chemistry, Dr. J. C. White, Thursday, at 8½ o'clock, at the Massachusetts General Hospital.

Clinical Medicine, Doctors S. L. Abbot and R. M. Hodges, Tuesday, at 4 o'clock, at the Massachusetts General Hospital.

Psychological Medicine, Dr. J. E. Tyler, Thursday, at 3½ o'clock.

CLINICAL INSTRUCTION.

Massachusetts General Hospital.—Monday and Thursday, at 8 o'clock; Wednesday and Saturday at 10 o'clock. City Hospital,—Wednesday at 9 o'clock, Ophthalmic Clinic; 10 o'clock, Surgical Visit; 11 o'clock, Operations; Friday, at 8 o'clock, Medical Visit; 9 o'clock, Medical Lecture; 10 o'clock, Surgical Clinic. Dispensary,—Wednesday and Friday, at 9 o'clock.

SPRING TERM, MONDAY, MARCH 12, TO MONDAY, JUNE 11, 1866.

RECITATIONS.

Anatomy and Physiology, Professor Holmes and Dr. D. W. Cheever, Tuesday and Friday, at 4 o'clock; 5 o'clock, daily, March and April, in the Dissecting-room.

Pathological Anatomy, Professor Ellis, Thursday and Saturday, at 8 o'clock.

Obstetrics, Professor Storer and Dr. H. R. Storer, Monday and Thursday, at 12 o'clock.

Surgery, Professor Bigelow and Dr. R. M. Hodges, Tuesday and Friday, at 12 o'clock.

Theory and Practice of Physic, Dr. F. Minot, Monday and Thursday, at 9 o'clock.

CLINICAL INSTRUCTION.

Massachusetts General Hospital, daily, at 9 o'clock. City Hospital, Wednesday and Friday, at 9 o'clock; Clinical Lecture on Surgery, by Dr. D. W. Cheever, Friday, at 10 o'clock. Dispensary, Tuesday, Wednesday, and Friday, at 9 o'clock. Marine Hospital at Chelsea, Wednesday at 9 o'clock. Eye and Ear Infirmary, Thursday, at 11 o'clock.

LECTURES AT CAMBRIDGE.

On the Mutual Relations of Science, by President Hill, Tuesday, at 11 o'clock; on Botany, by Professor Gray, Tuesday and Thursday, at 10 o'clock; on Natural Philosophy, by Professor Lovering, at No. 2 University Hall, Tuesday, at 11 o'clock; at the Museum of Comparative Zoölogy, by Professor Agassiz, Wednesday, at 3 o'clock, and Saturday at 10 o'clock; Rumford Lectures on Heat, by Professor Gibbs, Tuesday at 12 o'clock.

"SUMMER TERM, MONDAY, JUNE 11, TO SATURDAY, JULY 14, 1866."

RECITATIONS.

Theory and Practice, Professors Shattuck and Buckingham, Monday and Thursday, at 9 o'clock, at the Massachusetts General Hospital; Tuesday and Friday, at 12 o'clock, at the Medical College.

Chemistry, Professor Bacon and Dr. White, Monday and Thursday, at 12 o'clock.

Materia Medica, Professors Clarke and Dr. F. E. Oliver, Monday and Thursday, at 4 o'clock.

Clinical Medicine, Professors Bowditch and Ellis, and Drs. Abbot and Sinclair, Wednesday, at 4½ o'clock, and Saturday, at 9 o'clock.

Clinical Surgery, Dr. Hodges, Thursday, at 11 o'clock.

CLINICAL INSTRUCTION.

Massachusetts General Hospital, daily at 9 o'clock; City Hospital, Wednesday and Friday, at 9 o'clock; Marine Hospital, Chelsea, Wednesday at 9 o'clock; Eye and Ear Infirmary, Thursday, at 11 o'clock; Boston Dispensary, Tuesday, Wednesday, and Friday, at 9 o'clock.

Lectures at No. 2 University Hall, Cambridge, on Natural Philosophy, by Professor Lovering, Tuesday and Thursday, at 12 o'clock.

AUTUMN TERM, SEPTEMBER 13, TO NOVEMBER 4, 1866.

RECITATIONS.

Anatomy and Physiology, Tuesday and Friday, at 4 o'clock; Monday, Tuesday, Wednesday, Thursday, and Friday, at 5 o'clock.

Theory and Practice, Monday and Thursday, at Massachusetts General Hospital, at 9 o'clock; Tuesday and Friday, at the Medical College, at 12 o'clock.

Chemistry, Monday and Thursday, at 12 o'clock.

Materia Medica, Monday and Thursday, at 4 o'clock.

Clinical Medicine, Wednesday, at 4½ P. M., and Saturday at 9 A. M.

CLINICAL INSTRUCTION.

Massachusetts General Hospital, daily, at 9 o'clock; City Hospital, Wednesday and Friday, at 9 o'clock; Marine Hospital, Chelsea, Wednesday, at 9 o'clock; Eye and Ear Infirmary, Thursday at 11 o'clock; Boston Dispensary, Tuesday, Wednesday, and Friday, at 9 o'clock; Prof. Wyman, Anatomy, Boylston Hall, Cambridge, Tuesday and Thursday, at 11 o'clock.

Lectures on Microscope, by Professor Holmes."

The Massachusetts Eye and Ear Infirmary and the United States Marine Hospital at Chelsea were both open to students in Medicine. Six house pupils at the Massachusetts General, and five at the City Hospital were appointed annually.

On March 13, 1867, the title of the "Professorship of the Physiology and Pathology of the Nervous System" was altered to "Professorship of Physiology and Pathology". On August 31, 1867, Henry I. Bowditch resigned the Jackson Professorship of Clinical Medicine, and on September 28th Calvin Ellis was chosen to fill the vacancy. Other Faculty changes at this period were the resignation of Brown-Séquard December 28, 1867; the resignation of D. W. Cheever as Assistant Professor of Anatomy (January 5, 1868) and his appointment as Adjunct Professor of Clinical Surgery; the resignation of D. H. Storer as Professor of Obstetrics (July 15, 1868); the election of Charles E. Buckingham as Professor of Obstetrics and Medical Jurisprudence; and the appointment, October 27, 1868, of the following University Lecturers:* On Opthalmology, Henry W. Williams, reappointment 1866-71; on Hygiene, George Derby, reappointment

* University Lectures had been reëstablished January 31, 1863.

1867-71; on Tumors, Algernon Coolidge; on Psychological Medicine and Jurisprudence, John E. Tyler, reappointment 1866-71.

At the meeting of the Corporation November 21, 1868, the following appointments were made:* Francis Minot, Instructor in Theory and Practice; J. Nelson Borland, Instructor in Clinical Medicine; John P. Reynolds, Instructor in Obstetrics and Medical Jurisprudence; Fitch E. Oliver, Instructor in Materia Medica; Algernon Coolidge, Instructor in Pathological Anatomy.

On February 27, 1869, George C. Shattuck resigned the Deanship, and Calvin Ellis was established as his successor.

These various changes resulted in the following teaching corps of 1869: Calvin Ellis, Dean, Professor of Clinical Medicine; J. B. S. Jackson, Shattuck Professor of Morbid Anatomy; O. W. Holmes, Parkman Professor of Anatomy and Physiology; George C. Shattuck, Hersey Professor of Theory and Practice; Jeffries Wyman, Hersey Professor of Anatomy; H. J. Bigelow, Professor of Surgery; John Bacon, Professor of Chemistry; Chas. E. Buckingham, Professor of Obstetrics and Medical Jurisprudence; E. H. Clarke, Professor of Materia Medica; R. M. Hodges, Adjunct Professor of Surgery; James C. White, Adjunct Professor of Chemistry; David W. Cheever, Adjunct Professor of Clinical Surgery; Josiah Stickney Lombard, Assistant Professor of Physiology. Instructors: John P. Reynolds, in Obstetrics and Medical Jurisprudence; Fitch E. Oliver, in Materia Medica; Francis Minot, in Theory and Practice; J. Nelson Borland, in Clinical Medicine; Charles B. Porter, Demonstrator of Anatomy; Henry H. A. Beach, Assistant Demonstrator of Anatomy.

From such a list it may be seen that the School had reached a considerable size. In fact, the point frequently was raised,

* The *Quinquennial* dates refer to *Overseers'* confirmations of appointments.

at the meetings of the Faculty, whether the number of lectures had not already gone beyond the capacity of any one student. It was a vexed question whether an alteration in the time of beginning the lectures or in the length of the term was the more feasible. Two committees were appointed, one to consider the question of a new building, and the other the course of studies. Upon the recommendation of the latter committee it was voted (March 22, 1867) that the Faculty deem it expedient to omit a part of the regular subjects of the winter course, and teach them in the summer instead; that it is inexpedient to lengthen the winter course; that no teaching from text books or by recitation shall be given at the hospital, nor, in fact, any other instruction than that growing out of cases under observation; that no special charges shall be made for special courses by those already belonging to the Faculty, the department of Chemistry excepted; that the present fees be not increased; that the graduate's fees be increased to thirty dollars; that the matriculation fee be increased to five dollars; that the winter exercises shall begin at 8 A. M. and end at 8 P. M., divided as follows: 8 A. M. to 2 P. M.; 3:30 P. M. to 6 P. M.; 7 P. M. to 8 P. M.; that twenty morning hours during each week be assigned to College lectures, fifteen morning hours to hospital and clinical instruction, and eight hours to college exercises, thus: In the morning: Anatomy and Physiology, five hours; Physiology and Pathology, two hours; Surgery, three hours; Clinical Surgery, one hour; Materia Medica, three hours; Chemistry, two hours; Obstetrics, three hours; Pathological Anatomy, one hour; and in the afternoon: Pathological Anatomy, one hour; Theory and Practice, four hours; Clinical Medicine, three hours. Massachusetts General Hospital, Medicine two hours, Surgery four hours. City Hospital, Medicine three hours; Surgery, four hours.

It was not thought necessary to increase the number of the

Faculty. The Summer School was divided: Anatomy and Physiology, Holmes, Cheever and Porter; Physiology and Pathology, Brown-Séquard; Surgery and Clinical Surgery, Bigelow and Hodges; Chemistry, Bacon and White; Theory and Practice, Shattuck, Buckingham, Tyler and Minot; Obstetrics, Storer and Abbot; Pathological Anatomy, J. B. S. Jackson and Ellis; Materia Medica, Clarke and F. E. Oliver; Comparative Anatomy, J. Wyman; Clinical Medicine, Bowditch, Ellis, White, Minot, Abbot, Borland, Reynolds and H. K. Oliver; Ophthalmology, Williams.

The proceeds of the Summer School were to be divided among the departments enumerated, in which any instruction was given.

The trustees of the Massachusetts General Hospital considered the advisability of charging each student attending the hospital a fee of five dollars. This the Faculty deemed unwise, and their view prevailed. It soon became evident that if the teaching corps was to go on increasing in number, the management of the school must be separated from the teaching Faculty. This led to the request that the President and Fellows so modify the existing statutes of the School as to provide an executive Faculty to consist of the professors in the following departments: Anatomy, Chemistry, Theory and Practice, Materia Medica, Obstetrics, Pathological Anatomy; it being understood that the existing Faculty should not be disturbed. This led to the adoption of the following statutes:

STATUTES OF THE MEDICAL SCHOOL.

"The government of the Medical School shall be administered by an Executive Faculty, consisting of the President of the University and the Professors now members of the Faculty of the School; but as the present incumbents cease to hold office, the number of members shall be reduced to eight, and those members, (excepting the President, who shall be a member *ex officio,*) shall all be Professors in the Medical School, designated for that purpose by the Corporation. The Executive Faculty

shall have a Dean elected by themselves for such periods as may be determined with the consent of the Corporation, and may also adopt rules for their own government and for that of the School, provided the same do not contravene the laws of the University.

"The Professors, Adjunct Professors, Special Professors, Assistant Professors, and Instructors for the time being, shall constitute the Faculty of Instruction, which shall be charged with the instruction of the students, under the direction of the Executive Faculty.

"The Instructors shall be appointed annually, in September; the Adjunct Professors shall hold office during the term of the Professor to whom they are severally attached. The Special Professors and Assistant Professors shall hold office for five years. The Professors shall alone be eligible to the Executive Faculty.

"Students of Medicine designing to attend the medical lectures, or any of them, shall be matriculated in the University, by entering their names with the Dean of the Executive Faculty, to be enrolled by him, and by signing an obligation to submit to the laws of the University, and to the direction of the Faculty of Medicine.

"There shall be holden by the Executive Faculty two meetings in each year, for the purpose of examining candidates for the degree of Doctor in Medicine. These shall be holden in the Massachusetts Medical College, unless otherwise specially ordered. They may be continued by adjournment by vote of the members present, and if only one member attend at the time and place designated, he may adjourn the meeting from day to day till three members of this Faculty attend the meeting. Three members of this Faculty must be present at every examination. The first meeting for examination shall be held on the day next succeeding that on which the winter session ends; the second on the Monday next but one preceeding the Commencement in July. In extraordinary cases the Faculty may hold meetings for examination at other times.

"Every candidate for the Degree of Doctor in Medicine must comply with the following conditions before being admitted to examination:

"1. He shall satisfy the Executive Faculty that he is of good moral character, and has arrived at the age of twenty-one.

"2. He shall have attended two courses of lectures delivered at the Massachusetts Medical College by each of the Professors of the departments of Anatomy, Physiology, Chemistry, Materia Medica and Pharmacy, Morbid Anatomy, Midwifery, Surgery and Clinical Surgery, Clinical Medicine, and the theory and practice of Medicine; but if he shall have attended a similar course in any other College or University, approved by the Executive Faculty, the same may be accepted in lieu of one of the courses above required.

"3. He shall have employed three years in his professional studies under the direction of a regular practitioner of medicine.

"4. If he has not received a University education, he shall satisfy the Executive Faculty in respect to his knowledge of the Latin language and Experimental Philosophy.

"5. He shall have given notice of his intention to the Dean of the Executive Faculty four weeks previous to the day on which he presents himself for examination, and at the same time shall have delivered or transmitted to the Dean a dissertation, written by himself, on some subject connected with medicine. Every dissertation shall be submitted by the Dean to the examination of the Executive Faculty, in the mode which they shall point out.

"At the meeting for examination the Executive Faculty, with the aid of such of the other Professors, and of such adjunct Professors as they may select, shall examine all candidates who have complied with the foregoing conditions, in the nine departments following, viz.: Anatomy, Physiology, Chemistry, Materia Medica and Pharmacy, Morbid Anatomy, Midwifery, Surgery and Clinical Surgery, Clinical Medicine, and the Theory and Practice of Medicine. The examiners shall make report in writing to the Executive Faculty.

"To secure a recommendation to a degree, the candidate must pass a satisfactory examination in at least five of the nine departments, and have presented a satisfactory dissertation.

"The decision in respect to each candidate shall be made by vote of the Executive Faculty, and, if favorable to the candidate, shall be recorded by the Dean, and by him certified to the President, to be laid before the Corporation and the Overseers.

"Those candidates who have at the Spring examination received from the Corporation and Overseers the final approbation, shall be admitted to the degree of Doctor in Medicine by the President of the University, at a public Commencement holden on the Wednesday next succeeding the day of examination, on which occasion an address shall be delivered by some one selected for the purpose by the Executive Faculty. Those who may be approved at the summer examination will receive their degrees and diplomas in Cambridge on Commencement Day. Public invitation to attend the ceremony at the Commencement immediately following the Lectures, shall be given by the Dean of the Executive Faculty to the Fellows of the Massachusetts Medical Society, to all Medical Students and to every person who may take an interest in Medical Science."

"By-Laws of the Medical Faculty.

"Article 1. Stated Meetings of the Faculty. A stated meeting shall be held on the third Monday of September and on the first Monday in each month from October to March, inclusive. Other meetings may be called by the Dean.

"Article 2. Quorum. A majority shall constitute a quorum. A de-

partment may be represented by a Professor or his Adjunct, but in all cases each department shall have but one vote.

"Article 3. Order of Business. 1. Reading of Records. 2. Reading memorandum of business. 3. Reports of Committees. 4. Incidental business.

"Article 4. Standing Committees. There shall be a Standing Committee of: 1. Finance. 2. Reception on Public Days. 3. Announcements and Catalogues. 4. Winter and Summer Programme of Instruction. 5. Building. 6. Entertainments. 7. Library.

"Article 5. Dean. The Dean shall be elected annually at the stated meeting in February. He shall act as Secretary of the Faculty, notify its meetings, and keep a record of its proceedings in a fair and ligible handwriting. He shall read and lay upon the table, at each meeting, a list of the items of business to be attended to at that meeting, and he shall also keep and have at each meeting a book, exclusively devoted to the purpose, containing a record of standing votes, so designated when passed, and a list of the members of all Standing Committees. The Dean shall be ready to receive students desiring to join the School and shall answer letters of inquiry. He shall receive the Theses, and enter in a book kept for that purpose, the names of candidates for degrees, examine their credentials, and keep on file the certificates of their periods of study. With these certificates he shall also collect the graduation fee. He shall see that the Diplomas are printed, filled out and signed, and delivered to the President of the University, before the day of commencement. The Dean shall receive from students, to be refunded, the sum required to be deposited before using the Library.

"Article 6. Chairman. A Chairman shall be elected annually, at the stated meeting in February, to preside over the meetings of the Faculty.

"Article 7. Professors. Each Professor shall have sole charge of his own department of instruction, subject to the approval of the Faculty. He shall confine his lectures to his own subject, except by the special consent both of the Professor of any department interested, and of the Faculty. His lectures shall be delivered only at such hours and places as are specified by the Faculty. Each Professor shall make an annual report to the Committee for visiting the Medical School, and also, in writing, to the Faculty, at the close of the Lecture season.

"Article 8. Adjunct Professors. Adjunct Professors shall hold office only so long as the Professor of the department with which they are connected, and shall perform such duties as that Professor shall request.

"Article 9. Special Professors. Special Professors shall hold office for five (5) years only. They shall not give instruction except in their own special branches, and with the concurrence of the Professors of the departments to which their specialties belong. They shall lecture only at such times and in such places as the Faculty may direct.

"Article 10. Assistant Professors. Assistant Professors shall hold office for five (5) years only, and are to be appointed at the instance of the Professors of the departments with which they are to be connected. They shall perform, with the approval of the Faculty, such duties as the Professors of their departments may indicate.

"Article 11. Instructors. Instructors shall be nominated annually at the stated meeting in (September-February) at the suggestion of the Professors of the departments interested. There shall not be more than one Instructor in each department of instruction. It shall be the duty of Instructors to hear recitations.

"Article 12. University Lecturers. University Lecturers shall hold office for one (1) year only. They shall be nominated only by the Professor of the department most interested, and at the stated meetings in October and February.

"Article 13. Nominations. The nomination of no officer of instruction shall be acted upon except at a stated meeting of the Executive Faculty, or at one called for such purpose and notified as such.

"Article 14. Other Instruction. No officer of instruction shall take pupils for private medical instruction, nor participate in, organize, or countenance any medical instruction which has not received the formal approval of the Faculty at one of the two stated meetings held in October and February.

"Article 15. Qualification for Degrees. No part of the time spent in the Academicle department of a college shall be allowed to count as time spent in the study of Medicine.

"Article 16. Details of Examinations. 3. A list of Candidates shall be furnished to each Professor, who shall mark each candidate according to a scale of 8,—8 being the mark of excellence; and no candidate shall receive an affirmative vote who has not received at least four marks. 5. Ten minutes shall be allowed to each Professor for the examination of each candidate; questions may be asked on the dissertation during this period. 7. (Statute.) The decision in respect to each candidate shall be determined by the vote of the major part of the members of the Executive Faculty. 8. No affirmative vote shall be reconsidered except on the demand of three Professors. 9. A vote in the negative may be reconsidered on the motion of any Professor. It is very desirable that each Professor should vote independently,—YEA or NAY—the object of a ballot being to elicit and to express a collective and averaged opinion. Yet if any Professor cannot make up his mind without knowing how his colleagues have made up theirs he has a right, either or both— 1. To withhold his vote. 2. To avail himself of either of the above Rules 8 and 9.

"Article 17. Change of By-Laws. No clause of these By-Laws shall

be altered or suspended, except at a meeting succeeding that on which notice of such proposed suspension or alteration has been announced.

"Article 18. All By-Laws or Regulations previously existing inconsistent with this Code are hereby annulled.

"Passed 20th May, 1868. "GEO. C. SHATTUCK, Dean."

The committee* appointed to consider the need of new building for the Medical School reported in December, 1866. Their report relates in detail the shortcomings of the existing site on account of the unwillingness of the Parkman heirs to sell land adjoining the school building. The advisability of applying to the Legislature for a lot of land near the Technology Institute seemed to meet the views of a majority of the Faculty. Finally, a committee consisting of H. J. Bigelow, Holmes, and Shattuck was appointed to raise funds. Some idea of the necessity for this building on a new site can be seen from the fact that the capacity of the surgical lecture room was 263, and the medical lecture room 384, including the additional seats lately placed in the clinical room. The attendance at the School was 216 in 1865; 301 in 1866; 386 in 1867; 308 in 1868; and 306 in 1869. The fees were: Matriculation $5. For a whole year's instruction $200; for a winter term $120; for a spring term and summer term $100; graduation $20; Dissecting Room $5.

The winter term extended from the first Wednesday in November for seventeen weeks. Then there was a recess of ten days, during which were held examinations for the Degree, and a Commencement for conferring Degrees. Instruction was then resumed, and was continued till the middle of July, at which time there was a vacation of eight weeks, during which there were hospital visits. Recitations were then resumed, and continued until November first. A second examination for the Degree was held in July, in time for the College Commencement.

* Clarke, Bowditch, and White.

The establishment of a Dental School in connection with the University was advocated by the Medical Faculty as early as 1867. This request was granted by the Corporation July 17, 1867, when it was voted to establish a Dental School in the University. The relationship of these two Schools of Medicine and Dentistry will be considered later.

A new era was about to begin both at the College and at the Medical School,—an era compared with which, for growth, prosperity, and advancement, all previous periods were insignificant. Coming events had been foreshadowed in the report of President Hill for the year 1862-63. He said:

"Our country produces men of as fine natural talent for every department of learning and science as can be found among any people. But that talent almost never attains any high degree of culture, without being transplanted to Europe for a few years. It is now time that we should begin to develop among ourselves the learning and science which we diffuse among our people and apply to the arts of life. It is time that we should have in our country at least one institution thoroughly organized and amply endowed, at which it may be a principal aim to carry those students who have the highest talents to the highest degree of culture; and also through its teachers, its pupils and graduates, to extend the domain of science and increase the fruits of learning. The most able of our young graduates, and the most studious of our younger instructors, now feel compelled to go in person to the universities of Europe for the learning and science which they expound, or which they are to apply to practice hereafter. This dependency upon the older countries was honorable and beneficial in our childhood, but becomes disgraceful and injurious in our manhood."

President Hill resigned on September 30, 1868, and the College remained without a president until the election of Charles W. Eliot, May 19, 1869. The report of the acting president* for this year refers to the Medical School thus:

"The school has never occupied a higher position absolutely or relatively than at this moment. But its extended reputation is in its present

* Andrew Preston Peabody.

condition, a source of embarrassment; for its classes are outgrowing the capacity of the lecture rooms, which have already been twice enlarged. There are no proper laboratories for scientific and practical study and it is impossible either to construct such apparatus within the present walls, or to obtain additional land in the immediate vacinity for their extension."

We have now brought the history of the Medical School from its modest beginnings down to the point where that institution was represented by a substantial structure requiring the active coöperation of more than twenty teachers for its three hundred or more students. The widely agitated question of reform in medical education, already too long deferred, was becoming increasingly urgent. Harvard would make the trial. With a wise and fearless leader success might be expected. While there were honest misgivings among many within his own council, against the opposition of conservatism, and with no precedent to guide him, President Eliot won the tentative support of a bare majority of the Faculty. In the Faculty the President was fortunate in having a Dean willing to coöperate with him. Together with President Eliot, Calvin Ellis deserves a large share of credit for the reformation of medical teaching in this country, begun at the Harvard Medical School in 1870.

In the remaining chapters of our story, men and things will be viewed in a perspective different from that followed in the previous pages. Even in a history, it is difficult to deal impartially with the living. If in his endeavor to tell fairly the story of the Harvard School the writer should seem to be over critical at times, it will be only because he is striving for the frank narration of facts. He is never forgetful of the laborious and faithful lives of Harvard's great medical teachers, living and dead. While the Harvard School flourishes, let us believe the names of Cheever, White, H. P. Bowditch, C. J. Blake, Draper, C. B. Porter, Williams, J. O. Green, J. Collins Warren, Fitz, Dwight, Putnam, Baker, Knight, Wadsworth, Edes, Wood, F. C. Shattuck, Bradford,

Rotch, Minot, Councilman, W. L. Richardson, M. H. Richardson, Burrell, Ernst and Smith (I mention full professors only) will be as intimately associated with the history of her Medical School as are those of John Warren, John C. Warren, Waterhouse, Dexter, Jackson, Ware, Bigelow, Gorham, Hayward, Holmes, Wyman, Ellis, Storer, Channing, Clarke, Reynolds, Buckingham and Bacon.

So let us pass on (in volume III) to the tale of events which gives the generation of living men a claim to our grateful recognition.

APPENDIX, CHAPTER XXII.

JACKSON FUND.

"Original terms of Subscription to the Jackson Fund.

"Upon a representation that the Medical Faculty of Harvard University have incurred a debt or are under a liability to pay to that Corporation an amount of money about $16,000 which was necessarily expended upon the building in Grove St. in the city of Boston which is used by said Faculty for the delivery of their Lectures to Medical Students—that the members of said Faculty have for a long time past devoted and yet apply their time, learning and skill to the advancement of the department of science in said College almost gratuitously for the establishment of a Medical School, which if it does not surpass, should at least equal similar institutions of other colleges in the United States, and offer as strong inducements to students seeking instruction.

"We the Subscribers agree to pay to the Medical Faculty, or to a committee appointed by that body, the several sums of money set against our respective names to relieve said Faculty or its members from the pecuniary and professional burdens they are under for the erection and maintenance of said School to this time, and to provide in part the means of preserving the said building in a proper state of repair, and of defraying such current expenses and of furnishing such equipment as shall be requisite to place said School in the most favorable condition.

"We however stipulate as the conditions upon which we give this aid—

"1st. That said obligations incurred by the members of the Faculty shall be satisfied and cancelled.

"2. That any balance remaining shall be invested at interest, either with the funds of the Corporation of Harvard College by the Treasurer

or in such other manner as the Medical Faculty by a vote of a majority shall decide to be more expedient.

"3. That the income and produce of the sums so invested shall from time to time as it is received be subject to and be paid upon the order of said Faculty.

"4. That said Faculty for the time being, shall with fidelity apply such income to the support of said School and use their best endeavors to prevent its diversion to any other purpose or object.

"Wm. Sturgis	$5000.
"Jno. P. Cushing by Wm. Sturgis Atty	5000.
"Thomas Lee	5000.
"Jonathan Phillips	5000.
"Nathl Thayer	5000.
"Robert M. Mason for S E. Mason	2500.
"N. I. Bowditch for Miss Bowditch	2500.
"Josiah Quincy	500.
"Mary Pratt	1000.
"H. H. Hunnewell	500.
"Moses Williams	500.
"Mary Wigglesworth	500.
"John T. Heard (D. H. Storer)	100.
"Henry Cabot (O. W. Holmes)	100.
"Henry Lee " " "	100.
"Gardner Brewer " " "	100."

(The original manuscript is deposited with the Treasurer of Harvard College.)

PARKMAN DONATION.

1846. Extract from letter of Medical Faculty to Corporation, Feb. 22, 1846.

"Through the liberality of Dr. George Parkman, the Faculty have received the offer of a donation of a lot of land, principally flats measuring 100 feet by 60, with provision for light and air, situated near the north end of Grove Street and fronting the estate of the Massachusetts General Hospital, to be appropriated for the site of a new Medical College. The Faculty are of opinion, that if the donation be accepted by the Corporation and the estate belonging to the Corporation in Mason Street, be sold, the balance of money necessary to complete the new building might be provided for without expense to the University."

1847.

"Subscriptions for new building—(North Grove Street):

"Nathaniel Appleton	100
"Samuel Appleton	500
"William Appleton	500
"Martin Bremmer	100

"Francis C. Gray	200
"John C. Gray	100
"Abbott Lawrence	500
"William Lawrence	100
"Thomas Lee	100
"Francis C. Lowell	100
'John A. Lowell	500
"Charles Lyman	100
"Thomas H. Perkins	500
"David Sears	500
"George C. Shattuck	500
"Thomas A. Wales	200
	"$4600"

CLINICAL ADVANTAGES AT HARVARD.

MASSACHUSETTS GENERAL HOSPITAL 1821.

CHAPTER XXIII.

CLINICAL ADVANTAGES AT HARVARD.

Harvard has never owned and properly controlled a hospital. That has always been a regret, and at times a disadvantage. The disadvantage has been twofold. First, there is the well recognized necessity which all medical schools feel for clinical facilities. This necessity was early recognized by the government of Harvard College, when in 1784 they petitioned the Overseers of the Poor of Boston to allow the medical teachers to care for the sick in the Boston Alms House. From the time (1810) when this request was granted down to the present, the Medical School has never wanted for clinical material. There is a second phase of the question; as one follows the development of the school,—and this holds true of the other medical schools in this country with two or three notable exceptions,—one is impressed with the fact that vacancies in clinical professorships and lectureships are filled from the ranks of those who have succeeded in obtaining hospital, dispensary and asylum appointments. Those institutions are managed by independent trustees, often by boards without a single representative of the medical profession. They select their staffs without regard to the teaching abilities of the candidates. It is undoubtedly true that many boards of trustees are willing to coöperate with the faculties of medical schools to improve the standard of medical instruction; but such coöperation carries with it no rights for the teachers. Mostly, they teach and lead about their students on sufferance. So the field of selection of teachers for the medical schools is restricted, and university governors cannot reward suitably their teachers

with proper clinical facilities, nor can they appoint instructors, however able as teachers, who do not hold hospital positions.

Harvard has suffered from this. She has often secured great teachers, but her progress has been in spite of the system pursued in selecting them, and not as a result of the system. Within a few years, visions of better things have become clear, and today she is within sight of the goal of her long deferred hope. Harvard's transition from the College School to the Medical University seems almost complete, and we hope that one of the pillars of strength in the new scheme will be a University Hospital.

Let us leave the consideration of that for later chapters, and here pay some regard to the means which, through nearly one hundred years, have been employed with some measure of success.

At the opening of the nineteenth century the only hospitals in Boston were the Alms House and the Dispensary. Both of these were in the hands of the teaching corps of the Medical School. But the classes of medical students were growing, and Philadelphia and New York were offering clinical advantages far in excess of those available in Boston. James Jackson, John C. Warren, and Gorham were three examples of Boston medical students who had been obliged to seek hospital experience in Europe. So a practical, business-like question was before the medical teachers: either Harvard must procure hospital facilities for her students, or the students would seek clinical experience under private tutors, or at some better equipped school. Jackson and Warren acted. They sent the following circular letter broadcast, asking aid for the establishment of a hospital to meet the requirements of the case. Grateful as every student of the Harvard Medical School must be for the privileges and benefits of the great hospital that resulted from that letter, it has always been a source of regret that the hospital was not made an integral

part of Harvard University. Here is the appeal which has been appropriately called the "Corner-stone of the Massachusetts General Hospital":

"Boston, August 20, 1810.

"Sir,—It has appeared very desirable to a number of respectable gentlemen, that a hospital for the reception of lunatics and other sick persons should be established in this town. By the appointment of a number of these gentlemen, we are directed to adopt such methods as shall appear best calculated to promote such an establishment. We therefore beg leave to submit for your consideration proposals for the institution of a hospital, and to state to you some of the reasons in favour of such an establishment.

"It is necessary to urge the propriety and even obligation of succouring the poor in sickness. The wealthy inhabitants of the town of Boston have always evinced that they consider themselves as 'treasurers of God's bounty'; and in Christian countries, in countries where Christianity is practised, it must always be considered the first of duties to visit and to heal the sick. When in distress, every man becomes our neighbor, not only if he be of the household of faith, but even though his misfortunes have been induced by transgressing the rules both of reason and religion. It is unnecessary to urge the truth and importance of these sentiments to those who are already in the habit of cherishing them,—to those who indulge in the true luxery of wealth, the pleasures of charity. The questions which first suggest themselves on this subject are, whether the relief afforded by hospitals is better than can be given in any other way; and whether there are, in fact, so many poor among us as to require an establishment of this sort.

"The relief to be afforded to the poor, in a country so rich as ours, should perhaps be measured only by their necessities. We have, then, to inquire into the situation of the poor in sickness, and to learn what are their wants. In this inquiry, we shall be led to answer both the questions above stated.

"There are some who are able to acquire a competence in health, and to provide so far against any ordinary sickness as that they shall not then be deprived of a comfortable habitation, nor of food for themselves and their families; while they are not able to defray the expenses of medicine and medical assistance. Persons of this description never suffer among us. The Dispensary gives relief to hundreds every year; and the individuals who practise medicine gratuitously attend many more of this description. But there are many others among the poor, who have, if we may so express it, the form of the necessaries of life, without the substance. A man may have a lodging; but it is deficient in all those advantages which are requisite to the sick. It is a garret or a cellar, without

light or due ventilation, or open to the storms of an inclement winter. In this miserable habitation, he may obtain liberty to remain during an illness; but, if honest, he is harrassed with the idea of his accumulating rent, which must be paid out of his future labours. In this wretched situation, the sick man is destitute of all those common conveniences, without which most of us would consider it impossible to live, even in health. Wholesome food and sufficient fuel are wanting; and his own sufferings are aggravated by the cries of hungry children. Above all, he suffers from the want of that first requisite in sickness, a kind and skillful nurse.

"But it may be said, that instances are rare among us, where a man, who labours, with even moderate industry, when in health, endures such privations in sickness as are here described. They are not, however, rare among those who are not industrious; and who, nevertheless, when labouring under sickness, must be considered as having claims to assistance. In cases of long-protracted disease, instances of such a description do occur amongst those of the most industrious class. Such instances are still less rare among those women who are either widowed, or worse than widowed. It happens too frequently that modest and worthy women are united to men who are profligate and intemperate, by whom they are left to endure disease and poverty under the most aggravated forms. Among the children of such families also, instances are not rare of real suffering in sickness. To all such as have been described, a hospital would supply every thing which is needful, if not all they could wish. In a well-regulated hospital, they would find a comfortable lodging in a duly attempered atmosphere; would receive the food best suited to their various conditions; and would be attended by kind and discrete nurses, under the directions of a physician. In such a situation, the poor man's chance for relief would be equal perhaps to that of the most affluent, when affected by the same disease.

"There are other persons, also, who are of great importance in society, to whom the relief afforded by a hospital is exceedingly appropriate. Such are generally those of good and industrious habits, who are affected with sickness, just as they are entering into active life, and who have not had time to provide for this calamity. Cases of this sort are frequently occurring. Disease is often produced by the very anxiety and exertions which belong to this period of life; and the best are most liable to suffer. Of such a description, cases are often seen among journeymen mechanics and among servants.

"Journeymen mechanics commonly live in small boarding-houses, where they have accommodations which are sufficient, but nothing more than sufficient, in health. When sick, they are necessarily placed in small, confined apartments, or in rooms crowded with their fellow-workmen. They are sheltered from the weather, and have food of some sort; and these must, in many cases, be the extent of their accommodations. Per-

sons of this description would do well to enter a hospital, even if they had to pay the expense of their own maintenance. In most cases, they would suffer less, and recover sooner, by so doing. When, as sometimes happens, they have not the means of payment, they become objects of charity; and the welfare of such persons should be considered among the strong motives in favour of establishing a hospital.

"Servants generally undergo great inconveniences, at least when afflicted with sickness, and oftentimes much more than inconveniences. With so much difficulty is the care of them attended in private families, that many gentlemen would pay the board of their servants at a hospital, in preference to having them sick in their own houses. In some cases, however, neither the master nor servant can afford the expense of proper care in sickness. Not uncommonly, a young girl is taken sick in a large family, where she is the only servant. She lodges in the most remote corner of the house, in a room without a fireplace. The mistress is sufficiently occupied with the unusual labours which are thrown on her at a time perhaps when she is least fitted to perform them. Under such circumstances, how can the servant receive those attentions which are due to the sick? Of what use is it that the physician leaves a prescription to be put up at the Dispensary? He goes the next day, and finds that there has not been time even to procure the remedies which he had ordered; meanwhile, the period in which they would have been useful has passed by, and the incipient disease of yesterday has now become confirmed.

"Persons of these descriptions would not be disposed to resort to a hospital on every trivial occasion. But, when afflicted with serious indisposition, they would find in such an institution an alleviation of their sufferings, which it must gladden the heart of the most frigid to contemplate.

"There is one class of sufferers who peculiarly claim all that benevolence can bestow, and for whom a hospital is most especially required. The virtuous and industrious are liable to become objects of public charity, in consequence of disease of the mind. When those who are unfortunate in this respect are left without proper care, a calamity, which might have been transient, is prolonged through life. The number of such persons, who are rendered unable to provide for themselves, is probably greater than the public imagine; and, of these, a large proportion claim the assistance of the affluent. The expense which is attached to the care of the insane in private families is extremely great; and such as to ruin a whole family that is possessed of a competance under ordinary circumstances, when called upon to support one of its members in this situation. Even those who can pay the necessary expenses would perhaps find an institution, such as is proposed, the best situation in which they could place their unfortunate friends. It is worthy of the opulent men of this town, and consistent with their general character, to provide an asylum for the insane

from every part of the Commonwealth. But if funds are raised for the purpose proposed, it is probable that the Legislature will grant some assistance, with a view to such an extension of its benefits.

"Of another class, whose necessities would be removed by the establishment of a hospital, are women who are unable to provide for their own welfare and safety in one of nature's most trying hours. Houses for lying-in women have been found extremely useful in the large cities of Europe; and, although abuses may have arisen in consequence, these are such as are more easily prevented in a small than a large town.

There are many others who would find great relief in a hospital, and many times have life preserved when otherwise it would be lost. Such especially are the subjects of accidental wounds and fractures among the poorer classes of our citizens; and the subjects of extraordinary diseases, in any part of the Commonwealth, who may require the long and careful attention of either the physician or surgeon.

"It is possible that we may be asked whether the almshouse does not answer the purposes for which a hospital is proposed. That it *does not*, is very certain. The town is so much indebted to the liberality of those gentlemen who, without compensation, superintend the care of the poor, that we ought not to make this reply without an explanation. The truth is that the almshouse could not serve the purpose of a hospital, without such an entire change in the arrangements of it as the overseers do not feel themselves authorized to make, and such as the town could not be easily induced to direct or to support.

"The almshouse receives all those who do not take care of themselves, and who are destitute of property, whether they be old and infirm, and unable to provide means of assistance; or are too vicious and debauched to employ themselves in honest labour; or are prevented from so employing themselves by occasional sickness. This institution, then, is made to comprehend what is more properly meant by an almshouse, a bridewell or house of correction, and a hospital. Now, the economy and mode of government cannot possibly be adapted at once to all these various purposes. It must necessarily happen that in many instances the worst members of the community, the debauched and profligate, obtain admission into this house. Hence it has become, in some measure, disreputable to live in it; and not unfrequently, those who are the most deserving objects of charity cannot be induced to enter it. To some of them, death appears less terrible than a residence in the almshouse.

"It is true that the sick in that house are allowed some greater privileges and advantages than are extended to those in health; yet the general arrangements and regulations are, necessarily, so different from those required in a hospital, that the sick—far from having the advantages afforded by the medical art—have not the fair chance for recovery which nature alone would give them. Most especially they suffer for the want of good

nurses. In these officers must be placed trust and confidence of the highest nature. Their duties are laborious and painful. In the almshouse, they are selected from among the more healthy inhabitants; but, unfortunately, those who are best qualified will always prefer more profitable and less laborious occupations elsewhere. It must, then, be obvious that the persons employed as nurses cannot be such as will conscientiously perform the duties of this office.

"In addition to what has already been stated, there are a number of collateral advantages that would attend the establishment of a hospital in this place. These are the facilities for acquiring knowledge, which it would give to the students in the medical school established in this town. The means of medical education in New England are at present very limited, and totally inadequate to so important a purpose. Students of medicine cannot qualify themselves properly for their profession, without incurring heavy expenses, such as very few of them are able to defray. The only medical school of eminence in this country is that at Philadelphia, nearly four hundred miles distant from Boston; and the expense of attending that is so great, that students from this quarter rarely remain at it longer than one year. Even this advantage is enjoyed by very few, compared with the whole number. Those who are educated in New England have so few opportunities of attending to the practice of physic, that they find it impossible to learn some of the most important elements of the science of medicine, until after they have undertaken for themselves the care of the health and lives of their fellow-citizens. This care they undertake with very little knowledge, except that acquired from books;—a source whence it is highly useful and indespensable that they should obtain knowledge, but one from which alone they never can obtain all that is necessary to qualify them for their professional duties. With such deficiencies in medical education, it is needless to show to what evils the community is exposed.

"To remedy evils so important and so extensive, it is necessary to have a medical school in New England. All the materials necessary to form this school exist among us. Wealth, abundantly sufficient, can be devoted to the purpose, without any individual's feeling the smallest privation of any, even of the luxuries of life. Every one is liable to suffer from the want of such a school; every one may derive, directly or indirectly, the greatest benefits from its establishment.

A hospital is an institution absolutely essential to a medical school, and one which would afford relief and comfort to thousands of the sick and miserable. On what other objects can the superfluities of the rich be so well bestowed?

"The amount required for the institution proposed may, at first sight, appear large. But it will cease to appear so, when we consider that it is to afford relief, not only to those who may require assistance during the

present year or present age, but that it is to erect a most honourable monument of the munificence of the present times, which will ensure to its founders the blessings of thousands in ages to come; and when we add that this amount may be raised at once, if a few opulent men will contribute only their superfluous income for one year. Compared with the benefits which such an establishment would afford, of what value is the pleasure of accumulating riches in those stores which are already groaning under their weight?

"Hospitals and infirmaries are found in all the Christian cities of the Old World; and our large cities in the Middle States have institutions of this sort, which do great honour to the liberality and benevolence of their founders. We flatter ourselves that in this respect, as in all others, Boston may ere long assert her claim to equal praise.

"We are, sir, very respectfully, your obedient servants,

"James Jackson.
"John C. Warren."

A charter was obtained from the Legislature on February 25th, 1811, incorporating James Bowdoin and fifty-five others, —"good citizens of the Commonwealth",—under the name of the Massachusetts General Hospital. The Governor, Lieutenant-Governor, the President of the Senate, the Speaker of the House, and the Chaplains of both Houses were constituted a Board of Visitors. Twelve Trustees were made managers of the institution, four of them to be chosen by the Board of Visitors. The Province House Estate* was granted upon the condition that an additional sum of one-hundred thousand dollars should be obtained by private subscription within the five years following. Unfortunately, the war of 1812, which followed immediately, put an end to the undertaking until the year 1816. A resolve passed by the Legislature in that latter year repealed many of the troublesome con-

* This embraced a tract of land covering about half an acre between Marlborough (now Washington) street and Province street. The House was the ancient seat of the Governors of the Commonwealth. Its value in 1816 was twenty thousand dollars. Its value today would probably be something over eight hundred thousand dollars. It was leased to David Greenough in 1817, for ninety-nine years, for the sum of thirty-three thousand dollars. It will revert to the Hospital in 1916.

ditions imposed by the previous Act, and gave authority to sell the Province House, with the distinct understanding that the proceeds of the sale should go into the State Treasury, unless, within one year from the sale, the sum of one hundred thousand dollars should be obtained. The stone work in building the institution was to be done by convicts from the State Prison. Several hospital sites were proposed. Such physicians as Rand, Hayward, Warren, Jackson and Dexter favored that newly made land, now the Boston Public Garden.

In January, 1814, a remarkable address to the public was issued, saying, among other things, "that no plea arising from 'the hardship of the times', 'the general embarrassment of affairs', or 'the claims of other charities', can or ought to avail the community. If such a proposal as this fail, it will be, in the judgment of the undersigned, decisive of the fate of the establishment. It will then be apparent that *the will is wanting* in the public to patronize such an undertaking; and that the honor of laying the foundation of a fabric of charity so noble and majestic must be left for times when a higher cast of character predominates, and to a more enlightened and sympathetic race of men".

On May 18, 1814, a communication from George Parkman* was received in which he stated his intention to erect a Hospital for the Insane.§

In April, 1816, a second address from the promoters of the Hospital was sent out, in which it was stated that the prescribed time limit for raising a specified amount of money had been extended and modified, and that subscriptions could be directed to be applied to either the Hospital department or to the Insane department. The following letter sent to various towns shows the practical method then inaugurated:

---

* George Parkman was graduated A. B. at Harvard in 1809; M. D. Aberdeen 1813; died 1849.

§ The Almshouse had accommodations for eight insane patients only.

"BOSTON, May, 1816.

"*Gentlemen,*

"THE inclosed papers will explain the object of this communication. The legislature of the Commonwealth having made it the duty of the Trustees of the General Hospital to solicit the aid of the public for this important institution, they have considered that no mode was more likely to be acceptable and successful than to request a number of liberal and influential gentlemen in each town of the Commonwealth to obtain a small specific sum in such town; thereby equalizing the exertion and the contribution, and enabling every part of the Commonwealth to share in the honor of its foundation, and to have an equal claim to partake in its advantages.

"In the amount requested from each Town, the Trustees have carefully restricted their request to a sum in no case exceeding and in almost all cases, less than its relative ratio of wealth, as far as they could obtain information on the subject, leaving by far the greatest part of the burden of this contribution to be borne by the Capital, and by towns distinguished for greatness of wealth and population.

"With these views the Trustees request you Gentlemen to act as a Committee for the Town of Toppan and to obtain and remit to James Prince Esq., Treasurer of the Massachusetts General Hospital Corporation, if possible, a sum not less than 170 dollars, by subscription, in any form and in any amount, which will be likely best to effectuate the object and to equalize this charity among the benevolent.

"Lest this establishment should be considered of a local nature, the Trustees take the liberty to observe that it is the great object of this institution to enable persons in all parts of the Commonwealth to avail themselves of the best medical and surgical aid, which our country affords, under the most advantageous circumstances. The Trustees also hope that the proposed asylum for the insane, by the liberality which they trust will characterise the contributions to it, will, at no distant period, relieve, not only many individuals, labouring under this heaviest of human calamities, but also all the towns of this Commonwealth of a great part, if not the whole of the burden, to which they are at present subject for their superintendance and support.

"We rely, gentlemen, upon your co-operation in our exertions to attain this great object, and request that a return may be made of the result in your town, to either of the Trustees, or to the Treasurer, JAMES PRINCE, ESQ. on or before the first day of August next.

"We are Gentlemen, respectfully yours, &c.

"T. H. PERKINS. "DANIEL SARGENT.
"JOSHIA QUINCY. "TRISTRAM BARDNARD.
"JOS. MAY. "RD. SULLIVAN."

The Joy Estate at Charlestown was purchased* December 18, 1816, for an Insane Hospital, and land on Leverett Street was procured upon which to erect the General Hospital "as soon as the moneys, which they flatter themselves will be readily subscribed, shall have been collected". The result of this organized effort was that in three days the subscriptions were $78,802. To this was added $15,167 during the next six days, making a grand total of $93,969 collected in nine days. The final total subscription amounted to more than one hundred and forty-six thousand dollars. After the consideration of various sites, one on North Allen Street was selected for the General Hospital.

On April 6, 1817, Samuel Danforth, Isaac Rand, John Jeffries, Samuel Hayward, David Townsend, Thomas Welsh, Aaron Dexter, and William Spooner, were chosen consulting physicians; James Jackson, acting physician; John C. Warren, acting surgeon. Plans were drawn by the famous architect, Charles Bulfinch, and the corner stone of the Hospital was laid July 4, 1818. Rufus Wyman§ was elected Resident Physician and Superintendent of the Asylum.

The first patient was admitted to the Massachusetts General Hospital on September 3, 1821, and no further applications for admission occurred until September 20. On October 4th, Jackson nominated Walter Channing as his assistant. Six free beds were established January 10, 1822, and in November, 1823, a bequest of twenty-five-thousand dollars was received from John McLean, who donated a further sum of over ninety-thousand dollars to the Hospital as a residuary legatee. It was voted by the Corporation, June 12, 1826, that the best mode of perpetuating the memory of John McLean was to name the Asylum "The McLean Asylum for the In-

* For the sum of $15,650. In 1817 a tract of the estate not exceeding in all fifteen acres was purchased for $15,000.

§ A. B. 1799; A. M. 1804; M. B. 1804; M. D. 1811.

sane". The income from this McLean donation was so opportune that it was seriously proposed to give the donor's name to the General Hospital.

The hospital reports prior to 1826 have not been preserved. In that year there were forty-three free beds at the Hospital, and fifty-seven inmates at the Asylum. The west wing of the Hospital was completed, and the whole institution was free from debt,* while fifty thousand dollars had been invested in the Massachusetts Hospital Life Insurance Company.

In 1828 the Acting Physician and Acting Surgeon were requested to nominate assistants, "the Trustees deeming it desirable that occasional changes should be made in those nominated, when consistent with the welfare of the institution". The number of patients discharged for the year ending April 1, 1828, was 218. At the close of 1832 there were fifty-two patients in the Hospital: and fifty-one in the Asylum. During the sixteen years (1818-1833, inclusive) there had been 1015 admissions to the Asylum.

The growing needs of the Hospital were shown in 1834, by a petition from the Physicians and Surgeons asking for a new building or wing.§ Here are two instances which show the zeal and care with which the Hospital was cherished: The first deals with the election of Luther V. Bell (December 11, 1836) as successor to Thomas G. Lee, late Physician and Superintendent of the Asylum. Bell was unanimously elected, "provided a committee then appointed consisting of Messrs. Eliot and Quincy, shall be satisfied that he will pursue the course of moral and religious treatment of patients adopted by Dr. Lee, and they shall be so satisfied before communicating the appointment". The standard already set by

* The Hospital held a right under the charter of 1814 to grant annuities on lives, and by subsequent acts a share in all insurances companies' profits unless otherwise specifically stated in their charter.

§ Such wings were erected eleven years later.

Wyman and Lee was advanced by Bell. The second event was marked by the following resolution April 23, 1837:

"Voted that the Trustees have recently seen, with great pain, that a violation of the rules of the institution by one of its officers has become the subject of newspaper animadversion. In an institution like this, to which it is difficult to attract, and in which it is so important to command, public confidence, the strictest and most scrupulous adherence to rules, of which the propriety is unquestioned, is required by a just regard as well to its usefulness to the public, as to the character of those who have any agency in its direction and control. Where many persons are connected in different departments, the reputation of all is more or less affected by the conduct of each; and all are therefore bound, by respect for others as well as themselves, to conduct themselves in such a manner as to give no reasonable ground of complaint. The Trustees have felt unlimited confidence that no officer of the institution would expose himself to just centure, and they have on all occasions been but very slightly affected by remarks which they have had reason to believe were founded on jealously or misconception. But it is with very different feelings they regard an accusation of violation of a rule, which, on inquiry, proves to be true; and they think it due to themselves to take serious notice of it, and to put on record their denial of all knowledge of the circumstance at the time of its occurrence, and to express their hope that nothing may ever again require a similar expression of their feelings. Lest, however, the breach of confidence may be imagined to be of a more serious character than it really was, they think proper to state, that the circumstance to which they allude was the employment of Dr. J. Mason Warren, a young man not connected with the Hospital, during the absence of his father, whose turn it was to officiate."

The foregoing resolution does not seem to have been taken very seriously even by the trustees themselves.*

The elder Warren wrote a candid reply, fully and satisfactorily explaining the circumstances of the incident, and permanent good feeling was restored.

In 1844 an address from the Trustees to the public was issued, together with a letter from the six attending Physicians

* J. Mason Warren was elected visiting Surgeon to the Hospital in 1846, and served until his death in 1867. He was the founder of the Warren Triennial Prize, established at the Massachusetts General Hospital.

and Surgeons, asking for assistance in enlarging the Hospital. Over sixty-two thousand dollars were raised with which two large wings were erected. An unsuccessful attempt was made July 11, 1845, by J. C. Warren and Jacob Bigelow to establish a Lying-in department.*

The enlargement of the Hospital necessitated an increase in the medical and surgical staff, and in February, 1846, Henry I. Bowditch, John D. Fisher and O. W. Holmes were added to the medical staff, and Henry J. Bigelow, Samuel Parkman and J. Mason Warren were added to the surgical staff. An Out-patient Department was established in June, 1847, the new east wing being ready for the admission of patients. The growth of the hospital for the first fifty years is shown by the following table:

	Patients Admitted.
1821-31	3,592
1831-41	4,406
1841-51	6,393
1851-61	10,395
1861-71	13,764
Total	38,550

	Applications.	Admissions.
1862	1,888	1,693
1863	2,015	1,742
1864	1,932	1,700
1865	1,430	1,281
1866	1,328	1,223
1867	1,419	1,295
1868	1,474	1,357
1869	1,633	1,498
1870	1,706	1,381
1871	1,781	1,502

The report for the year 1847 is voluminous, and goes into

* The Humane Society had presented a similar petition in 1831.

the question of etherization, an important event in the Hospital. We have considered this matter in a separate chapter.

In 1864 (February 28th) it was recorded, "Whereas the interests of the out-patients will be promoted, the convenience of the Visiting Surgeons be subserved, and the benefits of the institution be increased, by the appointment of a surgeon to that class of patients, "Voted, That a Surgeon to out-patients be and hereby is established, whose duties shall correspond generally with those of the Physician to the same department". Algernon Coolidge (Harv. Med. 1853) was elected to the position.

There were in this year (1864) 1599 patients admitted to the Hospital proper, 3761 medical cases and 1858 surgical cases to the Out-patient Department, and 302 cases to the Asylum.

The Physician and the Surgeon to out-patients were authorized to charge each patient for his first visit, whenever such patient could pay. The number of Physicians and Surgeons in the Out-patient department was increased from year to year as the growth of the Hospital required. A new operating theatre was completed in 1868 which was used for its designated purpose until 1902. After H. J. Bigelow's retirement in 1886 it received his name. It is now used for the Zander apparatus. The new surgical amphitheatre opened in 1902 is known as the Bigelow Amphitheatre.

On June 4, 1869, the Trustees voted that all Hospital out-patients affected with diseases of skin be assigned to a special department under the care and treatment of James C. White.*

James C. White was Chemist and Visiting Physician in 1867, and in 1870 resigned to establish a special department in Diseases of the skin. A Dermatological Ward in the Hos-

* James C. White was graduated Harvard 1853, A. B.; 1856, M. D.; Adjunct Professor of Chemistry; Professor of Dermatology.

pital was opened in October of that year. The annual report shows that White made 2,045 visits to patients suffering from diseases of the skin. The report of 1871§ contains the following:

"The experiment of a separate ward for the treatment of patients afflicted with skin diseases, though by no means unsuccessful in its especial results, was regarded by the Trustees as open to some general objections, and was discontinued at the close of the year. Dr. James C. White had on his own part made a most faithful trial of the experiment, and had devoted to it his skill and experience in his specialty. He continues to serve the institution as Chemist, and Physician to patients with diseases of the skin."

The upbuilding of a hospital such as the Massachusetts General was of the greatest importance to the Harvard Medical School. Most of the instructors had had previous opportunities for teaching in the Hospital. Of course there were advantages to the School from this fact, and much the same arrangement with the various Boston hospitals maintains today. Here is the fragment of an ancient letter taken from the Warren papers, and bearing on the Hospital and School relationship in the early days of the Hospital's development:

1. "The Physicians and Surgeons of the Hospital are of an opinion, that the admission of medical pupils is not desirable at present; but having been requested to fix on some terms of admission, they have decided on such as appear to them reasonable. They are not anxious for pecuniary emolument from this source. Having been engaged for the last ten or fifteen years in helping forward this establishment, their feelings are deeply interested in its prosperity and success. The gratification of seeing so fine an establishment for the relief of the unfortunate, in full operation, is the highest reward they expect to receive; and the plans which are now maturing will, they are satisfied, afford them this pleasure in a very short time.

"The utility of the Hospital to the promotion of medical science, by affording a fair view of practice, by the introduction of improvements in

§ Page 669. "History of the Massachusetts General Hospital," by N. I. Bowditch. Most of the foregoing account of the Hospital has been derived from this source.

medical and surgical science, and in the mechanical part of the latter, they have always thought of great consideration. Something has already been done in this way; but as yet the arrangements are imperfect. Time is required to bring into order an institution, in which everything is new; but they are much satisfied with the rapid advances made towards the state of improvement which will crown their wishes.

"We are fully sensible of the difficulties which many students of medicine have to encounter in finding means to go through a regular medical education; at the same time we feel ourselves called on to act for the general welfare as well as the partial good, and to consider the future, as well as the present.

2. "The attending physicians and surgeons of the Massachusetts General Hospital have determined to fix on the fee of twenty dollars for a pupil's attendance, from the first day of March unto the first day of November, 1822.

"The pupils will be admited twice a week at least, at specified hours, and oftener when circumstances render it expedient.

"This fee may appear large from the circumstance that the patients are now few in number; and no fee has yet been demanded.

"It is necessary however that the fee determined on should be so with a view to the future; and the advantages even now, at the hospital, are considerable, greater probably than can elsewhere be obtained for the same sum; and they are daily increasing.

"Some persons may view this subject so slightly as to think that pupils should be admited to the hospital as a public institution without any fee or for a very small fee.

"The trustees of the hospital have determined that the medical attendants shall receive no other fee than that for admission of pupils—there is no salary nor no perquisites; but even some direct expenses.

"Now it is not to be presumed that any will expect physicians in full practice to leave their business and devote a considerable time to a public institution, without compensation. Every man must be paid for his labours in some way or other, and time and charge of such a public institution is not a small affair to those who would do justice to it. The idea that the increase of reputation or of business or of benefit through the medical school are to be a sufficient compensation for the arduous duties of this place, is not well founded. Any one who considers the matter in a disinterested way will perceive that neither of these are adequate sources of reward for so much time and responsibility as will be required here, especially if the physicians happened not to belong to the Medical School.

"The arrangements made now are not so much with a view to the present as the future. Some sort of return compensation must be provided to insure the attendance of medical men, such as the public demand for these situations. That which is contemplated will not amount to any-

thing like compensation for the services rendered; but it will be something to be added to other considerations; and as little as the respectability of the institution will admit.

"*No doubt there are physicians and very respectable ones who would undertake to attend the Hospital for nothing; but that they would continue to do so in a faithful manner for a succession of years is incredible. It is contrary to the common course of human affairs; and will never happen.* (Italics mine.)

"In regard to the claim which some may think they have to admission; because this is an institution of publick nature; such a claim is unfounded. Students of medicine have no claim on this Hospital, any more than other classes of the community. If the trustees of the Hospital think proper to admit them there for a reasonable fee; and they, on their part, think the advantages to be obtained will balance their fee—then there is a fair bargain between two parties. At one time there was much probability that medical pupils would be wholly excluded on account of the prejudices against their admission."

"MASSACHUSETTS GENERAL HOSPITAL.

"The Subscribers are desirous that pupils should derive all the benefit, which the Hospital can afford them; at the same time it is their duty to regard the good order of the Institution and the comforts of the patients. For these purposes they have drawn up the following rules for the admission and conduct of pupils.

"1. During the lectures the pupils attending the anatomical course will be admitted to see the surgical practice, and those attending the course on the theory and practice of physic will be admitted to see the medical practice of the Hospital.

"2. At other times the private pupils of the physicians and surgeons of the Hospital will be admitted equally to see all the patients; except where very peculiar circumstances may forbid.

"3. Hospital tickets will be furnished to other medical pupils, who will thereby be entitled to the same privileges at the Hospital, as the private pupils of the physicians and surgeons. All such tickets will be dated on the first day of either March of September. A Hospital ticket will admit a pupil to the Hospital for one year from its date, exclusive of the period of the lectures in the Massachusetts Medical College. The fee for a Hospital ticket shall be thirty dollars.

"4. The days and hours of attendance by the pupils at the Hospital will be from time to time made known to them. They will not be permitted to visit the Hospital on Sundays; nor at any other than the appointed hours on other days; except by the special order of the physician or surgeon.

"5. On the regular days of visiting the pupils are not to remain at

the Hospital longer than is absolutely necessary for the visits. They are not to converse with the patients or nurses. During operations and while in the wards they are to abstain from conversation with each other; they are not to walk about; nor in any other way disturb either the medical officer, or the patients.

"6. In all cases, in which it will be proper for the pupils to make any personal examination of a patient, such as feeling the pulse, examining a tumour, &c. an intimation to that effect will be given them by the physician or surgeon. It must be obvious that the greatest inconveniences must arise, if such examinations were commonly made by the pupils.

"7. In all cases the pupils should carefully abstain from any gesture or remark, which may tend to alarm the sick, or which may be regarded by them as an expression of contempt, or of ridicule. Likewise the pupils should carefully keep secret all such facts respecting the patients, as these would be unwilling to have known to the world.

"8. The pupils are invited to ask questions of a practical nature relating to the patients, being careful to be out of hearing of the patients.

"9. A Dresser will be appointed by the Surgeon; but will be liable to be removed for any indecorum or neglect of duty; and with the condition that he do not remain in the Hospital longer than his duties require. The periods and frequency of his attendance will be regulated by the Surgeon.

"10. The Superintendant will be requested to give notice to the Physician and Surgeon of any breach of these rules, which comes to his knowledge; and he will take immediate measures to enforce them, whenever the good order of the Hospital may render such measures necessary. The byelaws of the Corporation render pupils liable to a dismissal from the Hospital, for any indecorum or immorality.

"JAMES JACKSON,
"JOHN C. WARREN."

"Boston, May, 1824."

That all surgeons did not find the appointment to a place on the Hospital staff advantageous is evident from Edward Reynolds's letter of resignation, March 24, 1829, in which he says, "excepting to a student, there is no honor and no profit in it." In that year (1829) it became necessary to pass rigid rules on account of "having found that very serious inconveniences and alarming consequences have arisen from the manner in which the examinations of subjects in the Hospital have been conducted." This was at a critical time, and

it seems to have been a wise precaution to limit the performance of post-mortem examinations to a few trusted officials.

The payment of a fee for the privilege of attending lectures and operations at the hospital was soon discontinued. In 1867 an attempt was made to revive the custom, but it failed with the Trustees. In June, 1867, it was voted to allow women students the privileges of "medical visits," subject however to the discretion of the Visiting Physician and Surgeon, individually, and then only in separate classes, and to the female wards exclusively. In 1846, when the North Grove Street School was contemplated, John C. Warren addressed a communication to the Board of Trustees requesting the views of that body as to the erection of a Medical School in the neighborhood of the Hospital. The reply was as follows:

"At a meeting of the Trustees of the Massachusetts General Hospital held February 22, 1846, it was

"Voted, on the communication made to this Board by Dr. J. C. Warren on behalf of the Professors of the Medical School of Harvard University; That this Board are sensible of the courtesy which dictated the communication, but in regard to the subject of building a Medical College in immediate proximity to the grounds of the Hospital, they cannot perceive any advantage to this Institution to arise therefrom; but they think they can see that some disadvantages would be occasioned thereby. In stating, however, this opinion the Board do not assume any right to object to the course suggested in the communication, but intend simply to make an answer to the question proposed to them.

"attest, MARCUS MORTON, JR.
"Secretary Mass. Gen. Hospital."

It is not necessary to follow the growth of this Hospital further. One should note, however, that in that growth the advantages offered to students have been constantly increased. Department after department has been established and maintained for, as well as given in charge to, teachers at the School, until to-day the Hospital and School seem supplementary to each other. The new Out-patient Department

building, opened on the fifty-seventh anniversary (October 16, 1903) of the first public demonstration of ether calls for special mention. One of the conditions enjoined by the principal donor of funds for this building was that the interests of medical education should be considered in the outlay of his gift. Following this stipulation, lecture-rooms and rooms for students' section work were incorporated in the plans. The structure is of brick and stone, and is built in the shape of a letter L, a plan which insures good light in all the rooms. The whole building has been arranged in order to give students the advantage of the large amount of "clinical material" presenting itself. Indeed, the new Department calls for more than passing notice. In itself it is a great educational plant, supplementing the school buildings proper. The staff of the Department consists (1904) of eighteen physicians and surgeons, who also assist the visiting Staff of the Hospital; fifteen assistant physicians and surgeons, beside externes, graduate and undergraduate assistants, matron, nurses, clerks, etc., etc.

The Massachusetts General Hospital of today is governed by twelve trustees. The Medical Staff consists of six Visiting Physicians, and the Surgical Staff of nine Visiting Surgeons and three Assistant Visiting Surgeons together with one Aural Surgeon and four pathologists. The out-patient department has eighteen Physicians and Surgeons, and twenty-three specialists. Besides the four Resident Physicians there are twenty House officers. The capacity of the hospital is 265 beds. The number of house-patients in 1903-04 was 5,204, while there were 25,082 out-patients.

At the McLean Insane Hospital, which was removed to Waverly in 1895 there were 341 patients treated in 1903-04. The Convalescent Home is also at Waverly, a useful institution.

Following the establishment of the Massachusetts General

Hospital, came the Massachusetts Eye and Ear Infirmary, established 1824; the Institution for the Blind, established in 1829; and the Boston Lying-in Hospital founded in 1832. This last was the first of its kind in New England, and has maintained a leading position among similar hospitals of this country. The funds for its establishment were raised by subscription, and its first location was at 718 Washington Street. The first Resident Physician was Hook, and the Attending Physicians Channing and Hale, the Consulting Physicians being Warren, Bigelow and Hayward. It is now governed by a board of ten trustees, and the Medical Staff is composed of one Consulting Physician, one Visiting Physician, one Assistant Visiting Physician, and four Out-patient Physicians. The Resident Staff are three internes and six externes. In 1903-04 there were over 600 house patients and over 1,600 out-patients cared for by this institution. It was at this hospital that O. W. Holmes made that study of puerperal sepsis on which he founded his well known thesis.

In 1851 Elisha Goodnow bequeathed to the city of Boston twenty-five thousand dollars to found a local hospital. No action was taken upon the matter until 1857, when the mayor recommended the establishment of a City Hospital, transmitting to the city council at the same time a memorial from several physicians, giving their opinions of the necessity and value of such an institution. In the following year the Legislature passed an Act authorizing the city to establish and maintain "a hospital for the reception of persons who, by misfortune or poverty, may require relief during temporary sickness." In 1860 the city authorities selected a site consisting of about seven acres of land reclaimed from the sea, situated in the South End of Boston. The hospital was formally opened in 1864. It is governed by five trustees, one nominated each year by the mayor. The staff consists of four Consulting Physicians and Surgeons, sixteen Physicians and five

BOSTON CITY HOSPITAL.

Group of Trustees, Staff, House Officers and Nurses. New Amphitheatre.

FRONT ROW, LEFT TO RIGHT — McCollom, Wheelright, Keany, Rieter, A. Shuman, Ingalls, Sinclair, Cheever, Gay, Rowe.
(Architect) (Trustee) (Trustee) (Trustee) (Supt.)

SECOND ROW — A. Knight, Burroughs, Farlow, H. W. Cushing, Draper, Watson, J. O. Green, C. M. Green, Withington, Wadsworth, Councilman, Gavin, Burrell, Monks, Bolles, Gilbert.

THIRD ROW — Higgins, DeBlois, Leland, Haven, V. Y. Bowditch, H. Jackson, G. G. Sears, Prince, Knapp, Arnold, Ames, Thomas, Munro, Stetson.

FOURTH ROW — Blakely, Coffin, Bartol, J. B. Blake, Nichols, Reynolds, Bullard, Harding, Howe, E. W. Dwight, Bossidy, Lancaster, P. Thorndike, Jack, Carter.

FIFTH ROW, RIGHT HAND SECTION ONLY — Pratt, Courtney, Bottomley, Pearce, Mallory.

Assistant Physicians, nine Surgeons and eleven Assistant Surgeons, three Aural Surgeons, one laryngologist, four pathologists, six neurologists, three dermatologists, seven opthalmologists, six gynaecologists, besides medical registrars and surgical registrars. The house-staff consists of a Medical Superintendent, a Resident Physician, three Executive Medical Assistants, two Assistant Physicians, three Assistant Pathologists, eleven House-Physicians and Surgeons, two clinical clerks, four surgical dressers, eight externes, and two special externes. The total number of beds is 828, with an average of 730 occupants. The number of house cases in 1903-04 was about 9,000, the number of out-patient cases about 22,000. There are eight distinct out-patient departments besides a Convalescent Home of thirty-four beds and a model Relief Station in the north end of the city.

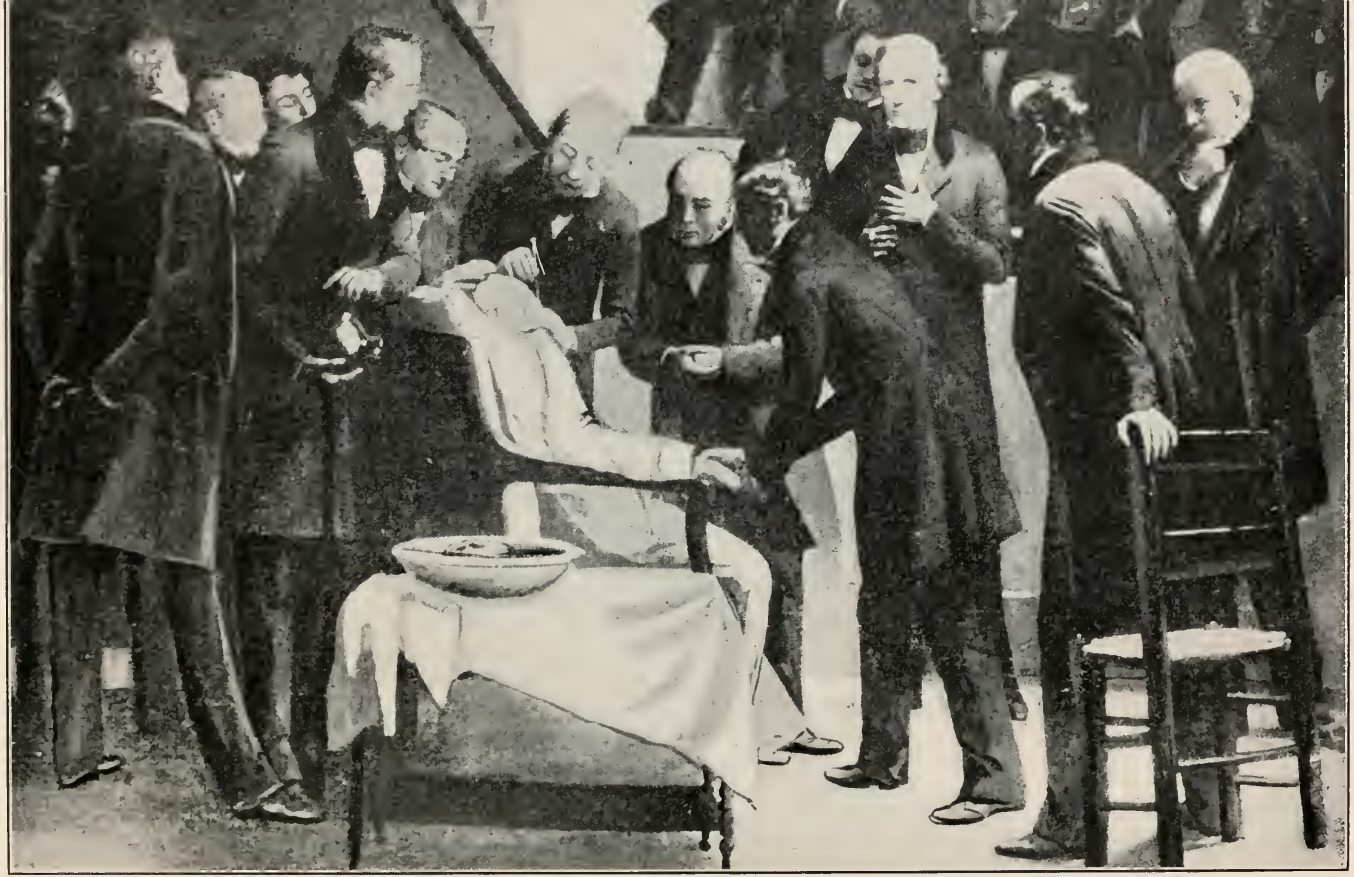
The House of the Good Samaritan was established in 1860 and the Children's Hospital in 1869. The Children's Hospital is governed by a board of twelve managers. It has a staff of eight Consulting Physicians and Surgeons, three Physicians and three Assistant Physicians, two Surgeons and four Assistant Surgeons, with three junior Assistant Surgeons, and ten specialists. The house is in charge of one medical and two surgical officers, and has a capacity of one hundred beds.

In addition to these hospitals, clinical advantages are offered to the students of the Harvard Medical School at the following places: Boston Dispensary; The Infants' Hospital, in the wards of which are treated children exclusively, under two years of age. It has also an out-patient department with an average yearly attendance of three thousand children. There is also the Free Hospital for Women and the Long Island Hospital, Boston Harbor, devoted almost entirely to the treatment of chronic cases. It has two hundred and fifty beds, with an average daily population of two hun-

dred and twenty. It is said that fully fifty per cent of the deaths at this institution are followed by autopsy, and afford abundant material for pathological study. Then there is the Carney Hospital, a large and flourishing institution which may some day rival in size the Massachusetts General.

From such statements it may be seen that the increase of clinical advantages for Harvard students has been very great; indeed, so far as I can learn, the Harvard clinic is the largest in this country. How well the School avails itself of these advantages, I shall attempt to show later in considering the separate branches of medical study.

ETHER, 1846.



A. L. PEIRSON W. T. G. MORTON J. MASON WARREN J. C. WARREN Operating GEO. HAYWARD S. PARKMAN H. J. BIGELOW A. A. GOULD S. D. TOWNSEND

THE FIRST PUBLIC DEMONSTRATION OF ETHER.

From Painting by Robert Hinckley

CHAPTER XXIV.

ETHER, 1846.

The introduction of the use of ether into surgical practice in 1846 was through no accident, nor was it the result of prolonged research and experiment. It came as a surprise, but as a perfectly matured discovery for which many had hoped; yet remarkably few had sought it. No great scientist had wrought it out; no deep thinkers had prophesied it. It was, in fact, a part of the wave of world-advance which prevailed at the time. Everything felt the impulse of that wave. New political parties took life, and with them developed new conditions of old questions—political and social—conditions, many of which were to be settled finally among us only through the merciless sacrifices of a civil war. Our country had doubled its population in the first thirty years of the century,* and in the decade 1830-1840 the population increased by 4,000,000. Civilization kept pace with the growth. An American literature in some fashion was beginning adequately to supplement works of foreign authors; Bancroft, Hawthorne, Emerson, Holmes, Longfellow, Poe, Prescott and Whittier were writing. Newspapers, wretched as many of them were, vied with each other rapidly to spread news through the country. The introduction of the power-loom by an alumnus of Harvard§ made possible the growth of many thriving and permanent cities. The omnibus was giving way to the street car, the stage-coach to canal boats and

* Population of United States in 1830 was 12,866,020.

§ Francis Cabot Lowell, 1793 H. U.

steam railroads. Most important of all was the discovery by Morse in 1844 of the magnetic telegraph, and then followed a multitude of minor miracles.

In medicine the speculative and dogmatic philosophies were passing. The labors of Bichat, Magendie, Johannes Müller, Rokitansky, Laennec, and Louis were supplemented by those of Claude Bernard, Du Bois-Reymond, Helmholtz, Ludwig, Virchow and others (names, names, alas! mostly, to modern readers, but names much repeated) resulting in the establishment of experimental physiology and pharmacology. In such a time, then, the world learned suddenly that surgical pain had been abolished. It was the fulfilment of the promise in Revelations, "Neither shall there be any more pain."

Certain pain-killing drugs had long been known. Ancient history tells of sundry instances of surgery done upon patients under the influence of opium, hyoscyamus, conium, belladonna, mandrake, Indian hemp, and other narcotics—all given to the point of intoxication, with the hope that painless surgery would result. Physiology has long since taught the reason why these means failed. Napoleon's surgeon, Baron Larry, operated on his half-frozen, wounded soldiers, at the battle of Eylau, and bore testimony that intense cold produced partial insensibility. But, like mesmerism, hypnotism, nerve-clamping, and alcoholic intoxication, all these lacked the *sine qua non* of Bigelow's test,—*inevitable, complete, and safe.* Ether was the first substance found to fulfill all these conditions. Remember, too, that in many of the agents used for the prevention or relief of pain, the real discovery was often within view, that the progress of surgery was retarded by the want of an anaesthetic, and, when we picture the horrors of those operations, we marvel at the seeming indifference of the scientific world, to the sufferings of mankind.

The introduction of Petit's tourniquet in 1718 advanced our art somewhat in the estimation of men, by robbing ampu-

tations of some of their sickening unsightliness; yet the century was far advanced before the old prejudice against surgery was mitigated. Even in such a brilliant thinker and disciple of surgery as John Hunter there were traces of the early prejudice that surgery was beneath the calling and dignity of the physician, on account of the cruel nature of surgical work, which he terms "humiliating examples of the imperfectness of the science." Robert Liston, as late as 1844, said of operative surgery, to his class at the University College Hospital, "This is regarded as an inferior part of our professional duties, and truly it is so. The field of operative surgery, though happily narrowed, is still extensive." In his lectures Liston paid special attention to instructing students how to give the least pain in operating, especially in dividing the skin. Sir James Simpson relates how near he came to abandoning the study of medicine on account of the horrors of the operating room. Abernethy and Cheselden dreaded every operation they performed, and the latter is said seldom to have slept the night before an operation. John C. Warren refers to the sinking of heart he felt in the distress of every painful operation to which no habit could render him insensible. Here is a story of Nathan Smith which does credit to that great man's sensibility; and it can truly be said that the introduction of anaesthesia has not robbed the human surgeon today of the tenderness and sympathy illustrated by this anecdote:

"Before the discovery of anæsthesia, surgeons suffered in their sensibilities, as well as their patients. With other pupils I accompanied the doctor to a distant town to see a capital operation. It was a case to excite commiseration. The patient was old enough to understand the purpose in hand, but not sufficiently mature to perceive its necessity. It was a chilly morning, as we sat by the fire, and the doctor looked at the patient at the farther end of the room. The lad was emaciated and trembling. Dr. Smith was visibly affected, his eyes dropped tears, and his heart trembled as he whispered to me, 'I shall not do what they expect! It is a cruel business, and I will perform a less severe operation,

in the hope that it may have the same effect.' On examination it became apparent that the severer operation (amputation of the thigh) could not be avoided. Before we returned to the room, he said to the attending physician, 'Hall, you know all about this boy's sufferings; at the moment we begin, bend over and across the bed to hide us from his sight, and do your best to comfort him,' the tears still falling from his eyes. At once he became calm, the tremor left him, and in less time than while I write this period, the operation was completed, and the patient recovered."

Then there is that striking picture so graphically sketched by Ashurst;* of a physician of the old days, himself the patient, who speaks:

"I at once agreed to submit to the operation, but asked a week to prepare for it; not with the slightest expectation that the disease would take a favorable turn in the interval, or that the anticipated horrors of the operation would become less appalling by reflection upon them, but simply because it was so probable that the operation would be followed by a fatal issue that I wished to prepare for death and what lies beyond it, whilst my faculties were clear and my emotions comparatively undisturbed. . . . The morning of the operation arrived. The operation was a more tedious one than some which involve greater mutilation. It involved cruel cutting through inflamed and morbidly sensitive parts, and could not be despatched by a few strokes of the knife. . . Of the agony it occasioned I will say nothing. Suffering as great as I underwent cannot be expressed in words, and thus, fortunately, cannot be recalled. The particular pangs are now forgotten; but the blank whirlwind of emotion, the horror of great darkness, and the sense of desertion by God and man, bordering close upon despair, which swept through my mind and overwhelmed my heart, I can never forget, however gladly I would do so. Only the wish to save others some of my sufferings makes me deliberately recall and confess the anguish and humiliation of such a personal experience; nor can I find language more sober and familiar than that I have used to express feelings which, happily for us all, are too rare as matters of general experience to have shaped into household words. During the operation, in spite of the pain, my senses were preternaturally acute. . . . I watched all that the surgeon did with a fascinated intensity. I still recall with unwelcome vividness the spreading out of the instruments, the twisting of the tourniquet, the first incision, the fingering of the sawed bone, the sponge pressed on the flap, the tying of the blood vessels, the stitching of the skin, and the bloody dismembered limb lying on the floor. These are not pleasant

* Semi-centennial of Anæsthesia, Massachusetts General Hospital, October 16, 1896.

remembrances. For a long time they haunted me, and, though they cannot bring back the suffering, they can occasion a suffering of their own, and be the cause of a disquiet which favors neither mental nor bodily health."

Opium and alcohol were the two agents most commonly used in the days immediately preceding the introduction of ether. Dorsey and Warren gave laudanum, and Mott says, "I was in the habit of giving opiates freely before the introduction of anaesthetics, both before and after operations. Opium and its preparations are the only anodynes well adapted for surgical use. No substitutes are worthy of confidence." Physick followed Richerand's suggestion, and employed alcohol, pushed to the point of intoxication. The earliest period at which ether is distinctly mentioned under that name is by Godfrey in the "Transactions of the Royal Society" for 1730. The first scientific account of the employment of hypnotic anaesthesia for surgical purposes is given by Recamier and Baron de Potel about 1821. Hypnotism was recommended by Cloguet in 1829, who removed a cancer of the breast, without pain to the patient, by its use.

Previous to the discovery of ether anaesthesia, inhalations of various vapors had often been employed, particularly for the amelioration of pulmonary affections. Inhalers had been used by Mudge, Gairdner, Darwin, Beddoes and Watt. Charles Scuddamore advocated the inhalation of iodine and conium in phthisis, and Sigmond speaks of the inhalation of stramonium. The inhalation of ether itself was advocated for phthisis and asthma, accompanied commonly by the statement that its use was attended with much danger, and always with much uncertainty. Anthony Todd Thomson, in the "London Dispensatory" of 1818, gives the following summary of the knowledge then extant upon the use of ether: "As an antispasmodic, it relieves the paroxysm of spasmodic asthma, whether it be taken into the stomach, or its vapors only be

inhaled into the lungs. Much caution, however, is required in inhaling the vapor of ether, as the imprudent inspiration of it has produced lethargic and apoplectic symptoms." In his "Materia Medica and Therapeutics," printed in 1832, Thomson does not mention the inhalation of ether, a significant fact, showing that its use had no doubt proved too dangerous and uncertain to warrant giving it a place in an authoritative work.

Nitrous oxide played a conspicuous rôle in the discovery of surgical anaesthesia. It calls for some mention here. At the close of the eighteenth century Sir Humphrey Davy wrote:* "In one instance when I had a headache from indigestion, it was immediately removed by the effects of a large dose of gas (nitrous oxide) . . . though it afterwards returned, but with much less violence. *The power of the immediate operation of the gas in removing intense physical pain I had a very good opportunity of ascertaining.*" Then relating how he relieved intense pain caused by the cutting of a "wisdom tooth," by the inhalation of three large doses of nitrous oxide, he concludes: "As nitrous oxide, in its extensive operations, appears capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place."

Again, in 1818, Faraday wrote:§

"When the vapor of ether mixed with common air is inhaled, it produces effects very similar to those occasioned by nitrous oxide. . . A stimulating effect is at first perceived in the epiglottis, but soon becomes very much diminished; a sensation of fullness is then generally felt in the head, and a succession of effects similar to those produced by nitrous oxide . . . It is necessary to use caution in making experiments of this kind. By the imprudent inspiration of ether a gentleman was thrown into a lethargic state, which continued, with occasional periods

* Proceedings Royal Society, 1799, "Research on Nitrous Oxide Gas," p. 566.

§ "Journal of Arts and Sciences," No. VII, vol. IV, p. 158.

of intermission, for more than thirty hours, and a great depression of spirits; for many days the pulse was so much lowered that considerable fears were entertained for his life."

Could any suggestion be more pregnant, or thought and investigation more direct? Yet they availed nothing for more than twenty-five years to hospital patients and battlefield martyrs. True, a few public lecturers like G. S. Colton went about the country giving popular exhibitions of the amusing effects produced by the inhalation of nitrous-oxide gas, and "ether frolics" became a form of entertainment. Here and there, however, young minds were leaving the paths so deeply grooved by generations of routinism, refusing to be bound by the superstition that pain was a punishment from God, and should be borne with Puritan fortitude.

> "Man yields to custom as he bows to fate,
> "In all things ruled,—mind, body, and estate;
> "In pain, in sickness, we for cure apply
> "To them we know not, and we know not why." *

If we confine ourselves to those in America who directed their thoughts to the obliteration of pain, we deal with four men:—Crawford W. Long, of Georgia, Charles T. Jackson and William T. G. Morton, of Boston, and Horace Wells, of Hartford, Connecticut; and all of them merit our regard. I do not propose to take part in the bitter old dispute, or dilate on the partisan claims, harsh denunciations, and undignified proceedings of that memorable controversy.

Let us recall first the incidents which led up to the great discovery, rejoicing that in that achievement America repaid in large part the debt she owed to the science and teachings of the Old World. In that accomplishment there is honor and recompense enough for all. If we seem to claim a large share of honor for our Alma Mater, let it be remembered that the

* Crabbe: "The Gentleman Farmer."

scene of the discovery's birth was the Massachusetts General Hospital, then, as today, under the supervision of Harvard teachers; that it was the Hospital's conservative senior surgeon, a Harvard professor, who courageously risked damage to his great reputation in acting sponsor for a drug the nature of which was then unknown to him; that a junior surgeon, Henry J. Bigelow, a Harvard teacher present at the demonstration, was the first characteristically to give the world an accurate scientific account* of this new thing so long prayed for; that one of the principal claimants (Charles T. Jackson) for the honor of being the discoverer of etherization was graduated from Harvard, while another (W. T. G. Morton) to whom most writers assign the honor of discoverer, was a student in the Harvard School, while making many of his earliest experiments with ether. So Harvard's record in this ether business is fittingly linked with that of the introduction into general use of inoculation, and of vaccination,—three contributions to American science.

To our story: Crawford W. Long was born in Danielsville, Georgia, on November 1st, 1815. He was graduated M.D. from the University of Pennsylvania in 1839. He first comes to our notice as a young practitioner of medicine living in the village of Jefferson, Jackson county, Georgia, in the year 1842. On a day in that year, a party of merrymakers indulging in one of the customary "ether frolics," pressed an unwilling negro lad into service. In this case the joke was carried too far for the peace of mind of the principals; and, taking alarm at the state of unconsciousness produced in the boy, they hurriedly sent for Long. Details of the treatment applied are not given, but it is stated that the victim soon regained consciousness, none the worse for the accident. Soon

* "Insensibility During Surgical Operations Produced by Inhalations," read before Boston Society for Medical Improvement, Nov. 9, 1846.

afterwards the young fellow who administered the ether entered Long's office as a medical student, and there awaited suitable opportunity to try the effects of ether in a surgical case. Nothing further transpired so far as the world knew until 1849, when a paper appeared in the December issue of the "Southern Medical and Surgical Journal" in which Long stated that prior to 1846 he had performed five surgical operations at Jefferson, Georgia, on patients insensible to pain by means of the administration of sulphuric ether. Those operations consisted of removing a small encysted tumor, half an inch in diameter, from the back of the neck (March 30, 1842); a second operation on the same gentleman for another encysted tumor of the neck (June 6, 1842); an amputation of the toe of a negro boy (July 3, 1842): removal of a small encysted tumor of the head (Sept. 9, 1843); and the amputation of a finger of a negro boy (Jan. 8th, 1845). *Long says: "The question will no doubt occur, why did I not publish the results of my experiments in etherization soon after they were made? I was anxious before making my publication to try etherization in a sufficient number of cases to fully satisfy my mind that anaesthesia was produced by the ether, and was not the effect of the imagination, or owing to any peculiar insusceptibility to pain in the persons experimented on. . . . I determined to wait . . . and see whether any surgeon would present a claim to having used ether by inhalation in surgical operations prior to the time it was used by me." Long's account seems to show that he failed to appreciate the immense significance of his experiment, and that it lacked demonstration of certainty and safety, and even completeness of anaesthesia by the agent used.

Long presented his claim to be the discoverer of painless

*R. M. Hodges, M. D. "A Narrative of Events connected with the introduction of Sulphuric Ether into Surgical Use," p. 116.

surgery at a meeting of the Georgia Medical Society in 1852, and the claim was vigorously championed by J. Marion Sims in the "Virginia Medical Monthly," May, 1877. Little if any evidence ever was produced to show that Long's early ventures were in any way a benefit to science or humanity, and certainly the world in no way appeared to be advantaged by his work.

On December 10th, 1844, G. S. Colton went to Hartford, Connecticut for an exhibition of the amusing effects produced by the inhalation of nitrous oxide. Some few of his spectators asked for a private exhibition, which was given on the following day. At this séance one of his audience (Samuel A. Cooley) while under the influence of the gas had his knees badly injured by running against furniture. Of this he was totally unconscious, and experienced no pain.

In that gathering was Horace Wells, a dentist, who had practiced in Boston as the partner of W. T. G. Morton. To Wells this experiment with nitrous oxide meant much. In it he saw a principle which in time should mean a new era in tooth-pulling. He asked Colton to fill his bag with the gas and go with him to his (Wells's) office, where he would submit himself to the experiment of extracting a tooth while under the influence of the gas. Colton agreed. A brother dentist, John M. Riggs, extracted an upper molar tooth from Wells, who exclaimed, as the effects of the gas passed off, "It is the greatest discovery ever made; I did not feel it so much as the prick of a pin."

Wells repeated the experiment on others with great success. He became enthusiastic, and, placing his business in the hands of a friend, went to Boston and sought an introduction to J. C. Warren. This was in January, 1845. Warren consented to a public trial at the Massachusetts General Hospital of nitrous oxide as an agent in producing painless dentistry. The test was made, "but not with such success as to command

attention." An advance had been begun, however, and had Wells been a little more patient before rushing to the public with an imperfect appliance, the final discovery of anaesthesia undoubtedly would have been credited to him. He had the principle, but not the experience and skill. He returned to Hartford discouraged, convinced that his dream could not be realized. Before the close of the year he abandoned dentistry, and sailed for Europe on other business.

Thus far there is nothing to show that Wells had made any *new* discovery; nothing to indicate that he had ever considered the employment of sulphuric ether as a surgical or dental anaesthetic. On the contrary, it is clearly proven that his attempt to apply Davy's suggestion of 1818 had failed; that from the time of his failure at the public demonstration in January, 1846, at the Massachusetts General Hospital, he made no efforts to remedy his failure. During the nine months intervening between Wells's failure and Morton's success in the search for an anaesthetic, these two former partners were occasionally seeing each other, and there is reason to believe that Wells knew of Morton's experiments. On October 19th, three days after Morton's first demonstration of the value of sulphuric ether, he wrote to his friend Wells. That letter and its immediate answer state the true conditions as to the relative rights of these two men to the honor of being the discoverer. Avarice, passion, jealousy, deceit had not yet entered into the question. Here are the letters:

"Boston, Oct. 19, 1846.

"Friend Wells:

"Dr Sir: I write to inform you that I have discovered a preparation by inhaling which a person is thrown into sound sleep. The time required to produce sleep is only a few moments and the time in which persons remain asleep can be regulated at pleasure. While in this state the severest surgical or dental operations may be performed, the patient not experiencing the slightest pain. I have patented it and am now about sending out agents to dispose of the right to use it. I will dispose of a right to

an individual to use it in his own practice alone or for a town, country or state. My object in writing you is to know if you would not like to visit New York and the other cities and dispose of rights upon shares. I have used the compound in more than one hundred & sixty (sic) cases in extracting teeth and I have been invited to administer to patients in the Massachusetts Gen Hospital and have succeeded in every case. The Professors Warren & Heyward have given me written certificates to this effect. I have administered it at the Hospital in the presence of the students and physicians, the room for operations being as full as possible. For further particulars I will refer you to extracts from the daily Journals of this city which I forward to you

"Respecty yours
"Wm. T. G. Morton."

"Hartford, Conn., Oct. 20, 1846."

"Dr. Morton: Dear Sir: Your letter, dated yesterday, is just received; and I hasten to answer it, for fear you will adopt a method in disposing of your rights which will defeat your object. Before you make any arrangements whatever, I wish to see you. I think I will be in Boston the first of next week, probably Monday night. *If the operation of administering the gas* is not attended with too much trouble, and *will produce the effect you state,* it *will undoubtedly be a fortune to you; provided it is rightly managed.*

"Yours in haste,
"H. Wells."

Such letters stamp the two men.

Wells went on making preparations to leave the country, in the meantime giving his attention to patent shower-baths, picture selling, etc. He left behind for Morton the following letter, however, which fails to mention that he had discovered anything other than a *principle,* a fact we cannot afford to overlook:

"Hartford, Dec. 10, 1846."

"Dear Sir: Have just seen a copy of your claim and find that it is nothing more than what I can prove priority of discovery by at least 18 months. When in Boston at your room I was well satisfied that the principal ingredient was ether, and to all appearances it had just the effect of this alone upon the patient to whom I saw it administered in your office, yet as you claimed it to be a compound, I supposed it must be so. Now Dr I do not think I have been treated with fairness in this matter, I spent my time and money to introduce this invention to the public nearly two years since, as soon as Dr. Jackson finds that the prin-

ciple is as I represented when in Boston, it is immediately patented. You doubtless remember what I said to the medical class when I addressed them in Boston nearly 2 years since which was that my discovery did not consist in giving any specific article to produce this excitement, but that it was the fact that when this excitement was produced in any manner whatever the system became paralysed. I then cited as analagous cases the man who is drunk, or the man who is much excited by passion does not suffer pain when wounds are inflicted at the time—Now I do not wish or expect to make any money out of this invention, nor to cause you to be the looser, but I have resolved to give a history of its introduction, that I may have what credit belonges to me, although it is in my power to invalidate your patent by word yet so long as we remain on good terms I shall not aim to do it—At the time I commenced using gass I had prepared to use sulphuric ether entirely instead of nitrous oxide gas, but Dr. Marcy advised me to desist from using it as it was more dangerous than nitrous oxide gas, how far I made use of it I have studiously avoided to say anything about in my address to the public as I am willing you should be rewarded for your perseverance in its introduction to general use. At the same time if I had not used a particle of sulphuric ether I doubt if you can sustain your patent, inasmuch as the nitrous oxide gas (the effect of which is identical with that of ether) has been extensively used for the same purpose.

"It is not at all likely that I shall ever make use of any kind of gass, nor do I ever expect to receive any compensation for the discovery but I am fully resolved that the world shall know that I was the first to discover and make known this great principle when applied to surgical operations. The principle is this that any kind of stimulating gass when inhaled so paralyses the system that surgical operations may be performed without pain. and I shall lay no stress upon any particular kind of stimulant to be used, as there are various kinds which are essentially the same.

"Yours Truly

"H. Wells."

Wells returned home from Paris in March, 1847. The world was then alive to the new discovery, and he had already laid claim to the credit of it. This claim was maintained with vigor. Later, every effort was made to prove that nitrous oxide was the equal if not the superior of sulphuric ether as a surgical anaesthetic, but the latter held its advantage, and this result contributed to Wells's failure in business, to the unbalancing of his mind, and finally to his untimely death on January 24, 1848. That was at the age of thirty-three,

after his commission of extraordinary acts which led to his arrest, but for which he could not be held responsible. Wells's biographer says that his condition at the time of his death was "brought about by experimenting on himself to a dangerous extent with the powerful and almost unknown agent chloroform, of which he had formed the impression that it was a better agent than nitrous-oxide." Wells was volatile, ingenious, enterprising and honest; and doubtless posterity owes him something of a debt.

More or less associated with Wells were Charles T. Jackson and William T. G. Morton. Wells visited Jackson's laboratory when he came to Boston, and it is known that he conversed with Jackson upon the value of different anaesthetics. Morton, as we know, had been Wells' partner in dentistry, and had lived in Jackson's house. All this intimacy existed at the time when each is said to have been considering anaesthesia.

Charles Thomas Jackson was born at Plymouth, Massachusetts, June 21, 1805, and was graduated from the Harvard Medical School in 1829. In 1846 Jackson was not unknown to the public. He had claimed the honor of being the discoverer of gun-cotton and the electric telegraph. His tastes were towards the sciences of chemistry, geology, mineralogy, and electricity, and he had gained early a national reputation in all. He was a member of many of the scientific and literary societies of the country, and had a wide acquaintance among the savants of the old world. In Boston he was perhaps the first scientist of his day, and withal was a man much sought after in the scholarly as well as in the social gatherings of the town. In 1844 Jackson received the young dentist Morton as a medical student into his family.

William Thomas Green Morton was born in Charlton, Worcester county, Massachusetts, August 9, 1819. After receiving a common school education he went to Boston,

Charles T. Jackson

where he worked as a clerk and salesman in various places of business. Later he went to Baltimore and studied dentistry in the College of Dental Surgery. In 1841-42 he began practice at Farmington, Connecticut. There he met Horace Wells, an unusually skilful dentist, then living in Hartford. A partnership was formed between the two, and they moved to Boston. This partnership was amicably dissolved the next year (1843), and Wells returned to Hartford. Morton next opened an office at 19 Tremont Street, then an active medical centre, and in March, 1844, he entered his name as a student of medicine in the office of Charles T. Jackson. During the ensuing summer Morton, with his newly married wife, lived in the family of his preceptor, fitting himself to enter the Harvard Medical School, where he matriculated in the autumn of 1844. Morton was never graduated, however, as the necessity for gaining a living from his dental business, together with the attention he was given to ether anaesthesia, interrupted his medical studies. He was given the honorary degree of M.D. by Washington University, at Baltimore in 1849.

While a student in Jackson's office, Morton had a patient, a Miss Parrott, of Gloucester, Massachusetts, who wished to have a sensitive tooth filled. He consulted Jackson, and was advised by him to apply chloric ether to the gums. Jackson assured him that he had himself used it as tooth-ache drops when he practiced medicine. Morton did as advised, and the trial seems to have been successful. This was in July, 1844. It is important to note exact dates, even days, as we progress with the story. Morton had now added ether to the list of local anaesthetics, just as Davy had tried nitrous oxide for general anaesthesia. But Morton did not rest satisfied; he knew the financial advantage that painless dentistry would be if he could so perfect it. He was a shrewd fellow, and was not taking any chance of losing the prize, if secret-

iveness and planning might help. Much of the future wrangle and loss of individual glory might have been avoided if Morton had had an appreciation of the true scientific spirit; certainly the discovery would have materialized earlier if he and Jackson had united their efforts.

However, early in 1846, Morton began a series of ether experiments upon fish, dogs, and other animals. He gave up his medical studies and placed his office in charge of a colleague (June, 1846), so that he might devote his whole time to research. This date is important, as he then gave to his attorney, Richard H. Dana, Jr., the first intimation of his purpose. The knowledge was imparted during the drawing up of articles of partnership between himself and Greenville G. Hayden, by which arrangement the latter was to conduct his dental business. Morton went on during that summer riding his "hobby." He bought ether in small quantities from one druggist,* and discussed the nature of ether with another;† gaining from the latter all the information then available in the trade. He visited an instrument maker§ and learned a satisfactory method of adminstering sulphuric ether. He went so far as to prophesy to Gould, "I will have some way yet by which I will perform my operations without pain." Gould smiled incredulously and replied, "If he could effect that, he would do more than human wisdom had yet done, or than I expect it would ever do."

Morton listened to Jackson's frequent and protracted exposition of the latter's claim to the invention of the electric telegraph, yet, although living in his family, no mention was ever made of the question upon which his own brain and energies were centered, and upon which Jackson's well stored mind would have been of inestimable value. Thus matters stood up to *September 30, 1846*, as far as Morton is con-

---

* Joseph Burnett. † Theodore Metcalf. § Joseph M. Wightman.

cerned; and, as far as the world then knew, such is a fair statement of the position until then taken by Jackson. This date marks the parting of the ways which resulted in a controversy upon which the third generation even is divided. All accounts agree that a very important interview was briefly as follows:

On September 30th, 1846, Morton went to the laboratory of Jackson and took from a closet an India-rubber gas-bag. In reply to Jackson's inquiry, Morton said that he had a refractory patient who needed to have teeth extracted, and it was his intention to have the patient inhale pure air. By this means he hoped to produce anaesthesia, by convincing the patient that some new agent was being employed in the bag. A conversation ensued upon the effects of the imagination, as well as on the properties of nitrous oxide in producing insensibility. Jackson told Morton to try sulphuric ether, as that would produce the insensibility desired. The ether was to be spattered on a handkerchief and inhaled, and in a moment or two perfect insensibility would be produced.

"Sulphuric ether," said Morton, "what is that? Is it gas? Show it to me."

Jackson showed him some ether, illustrated with a dry folded towel how to inhale it, and assured Morton that it would not do any harm. "College and school-boys often amuse themselves by breathing it, and I have tried it myself." Morton's pretended ignorance no doubt deceived Jackson. He obtained a bottle of ether at Burnett's pharmacy, went home, and administered to himself, instead of to the mythical patient he had pictured to Jackson, a strong dose of the ether vapor.

He says: "I looked at my watch, and soon lost consciousness. As I recovered, I felt a numbness in my limbs, with a sensation like nightmare; and I would have given the world for somebody to come and arouse me. I thought for a mo-

ment I should die on the spot in that state, and the world would only pity or ridicule my folly. At length I felt a slight tingling of the blood in the end of my third finger, and made an effort to touch it with my thumb but without success; at a second effort I touched it, but there seemed to be no sensation. I attempted to rise from my chair, but fell back. Gradually I regained power over my limbs and full consciousness. I immediately looked at my watch, and found that I had been insensible between seven and eight minutes."

Now he was ready for a patient upon whom to try the ether. Fortune favored him, for that very night a stout, healthy man, Eben H. Frost, came to his office for the extraction of a very painful tooth. He asked that mesmerism be tried, but on being assured by Morton that he possessed something better than mesmerism to allay pain in the extraction of teeth, the patient consented to its use. A folded towel was saturated with ether and held to the patient's mouth and nose until primary anaesthesia was produced. A deeply adherent bicuspid tooth was quickly extracted, and so pleased was Frost with the success of the operation that he wrote the following certificate:

"This is to certify that I applied to Dr. Morton this evening at eight o'clock, suffering under the most violent tooth-ache; that Dr. Morton took out his handkerchief, saturated it with a preparation of his, from which I breathed about half a minute, and then was lost in sleep. In an instant more I awoke, and saw my tooth lying on the floor. I did not experience the slightest pain whatever. I remained twenty minutes in his office afterward, and felt no unpleasant effects from the operation.

"EBEN H. FROST."

"Boston, 42 Prince Street, Sept. 30, 1846."

"We witnessed the above operation, and the statement is in all respects correct. And, what is more, the man asked where his tooth was, or if it was out.

"A. G. TENNEY, Journal Office.
"G. G. HAYDEN, Surgeon Dentist."

The foregoing certificate was duly advertised in the newspapers with an apparently prearranged accuracy. Morton re-

ported to Jackson the success of his experiment of the evening previous, and asked for a certificate that the vapor might be inhaled with safety. This Jackson would not give, arguing that one successful etherization, especially for a mere tooth extraction, would not be considered by the community satisfactory proof of safety. A public demonstration before competent witnesses should be given.

Naturally the Massachusetts General Hospital was the one place in Boston where such a test was possible. Morton hesitated. He recalled Wells's experience, but above all he feared that the odor of the ether would betray its nature, and he would thereby loose all financial remuneration from it as a *secret* compound. Jackson again came to his assistance, and assured him that the odor of ether could be effectually disguised by the addition of French Essence.

Thus fortified, Morton called on John C. Warren and made known to him the result of his operation on Frost. He asked for an opportunity to demonstrate the value of his discovery, at the same time he cautiously withheld from the surgeon the nature of the anaesthetic. Warren was interested, and promized to give the new remedy a trial on the first suitable surgical patient presenting himself at the Massachusetts General Hospital.

The question whether Morton was the assistant of Jackson, or the principal himself, in this visit to Warren has been one of the leading "points" in the ether controversy. Jackson's contention will be given later. It is interesting to note here that Warren says,* "Dr. Jackson has also stated to me that he advised Mr. Morton to apply to me to use it in a surgical operation."

On the morning of October 13, 1846, Gilbert Abbott, aged twenty years, by occupation a painter, tall, thin, and of a

* "Life of John C. Warren," vol. 1; Biographical Notes, page 386.

tubercular heredity, came to the hospital for an operation for the removal of a "birth-mark" on the neck. Warren was on duty, and, remembering his promise to Morton, he explained the situation to Abbott and proposed that he submit himself to the novel treatment. The class of medical students knew Warren's comparative ignorance of what was proposed, and all curiously awaited the trial. On Wednesday, October 14th, Morton received the following note:

"Dear Sir: I write at the request of Dr. J. C. Warren, to invite you to be present on Friday morning, at ten o'clock, to administer to a patient, then to be operated on, the preparation which you have invented to diminish the sensibility to pain.

Yours respectfully

"C. F. Heywood,

"House Surgeon to the M. G. H."

The question of a proper inhaler troubled Morton, and came near defeating the plan. Jackson advised a large glass flask with a bent tube three feet long. Mr. Wightman substituted a glass funnel for the tube. Both appliances made no provision for avoiding the inhalation of the expired air. Gould sketched an inhaler consisting of a glass globe with two necks, one of which was stopped with a cork, along the side of which deep grooves were cut to admit air freely into the globe, and thus mix with the vapor from an ether sponge placed inside, while on the other neck of the flask a tube was attached, containing a vale which was opened by the patient's inspiration, and closed again by his succeeding expiration. Morton went to N. B. Chamberlain, an instrument maker, at four o'clock in the morning, and although he was unable fully to complete the flask in the few hours allowed him, he had the apparatus fit for use by ten o'clock. So Morton was able to reach the hospital within fifteen minutes beyond the appointed hour. He was accompanied by Frost, the hero of the tooth pulling exhibition of September 30th.

W. T. G. Morton

The following description of the first public operation under ether is from an account furnished by an eye-witness:*

"The day arrived; the time appointed was noted on the dial, when the patient was led into the operating-room, and Dr. Warren, with a board of the most eminent surgeons in the State were gathered around the sufferer. 'All is ready—the stillness oppressive.' It had been announced 'that a test of some preparation was to be made, for which the *astonishing* claim had been made, that it would render the person operated upon free from pain.' Those present were incredulous, and as Dr. Morton had not arrived at the time appointed, and fifteen minutes had passed, Dr. Warren said, with significant meaning, 'I presume he is otherwise engaged.' This was followed with a 'derisive laugh,' and Dr. Warren grasped his knife and was about to proceed with the operation; at that moment Dr. Morton entered a side door, when Dr. Warren turned to him, and in a strong voice said, 'Well, Sir, your patient is ready.' In a few minutes he was ready for the surgeon's knife, when Dr. Morton said, '*your* patient is ready, Sir.'

"The operation was for a congenital tumor on the left side of the neck, extending along the jaw to the maxillary gland and into the mouth, embracing the margin of the tongue. The operation was successful; and when the patient recovered he declared he had suffered no pain. Dr. Warren then turned to those present and said, 'Gentlemen, this is no humbug.' 'The conquest of pain had been achieved.'"

The first demonstration was undoubtedly an imperfect etherization, yet so successful had been the result that Henry J. Bigelow remarked, as he left the hospital, "I have seen something to-day which will go around the world." But Bigelow was a genius. A further test was made on the following day, in the case of a woman who came as an out-patient, with a fatty tumor on the right shoulder. George Hayward operated on her. The task occupied seven minutes, and at no time did the patient give the slightest sign of sensation. The next operation under ether, at the Hospital, did not take place until November 7, 1846.

Warren believed at first† that the insensibility was due to

* Dr. Washington Ayer, of San Francisco, published in the "Occidental Medical Times," March, 1896.

† Subsequently changed his opinion.

asphyxia, an opinion somewhat justified by the method of inhalation employed, as well as by the dark color of the blood of many patients improperly under ether.

Morton went on experimenting, giving ether for private operations here and there. He had won the confidence and co-operation of Henry J. Bigelow, through whose good offices he was again permitted to appear at the Massachusetts General Hospital on November 7th. At one of the private operations done by Dix, in the interim, Bigelow made the important discovery that the *pulse* was the true guide as between safety and danger in the use of ether. A great deal of credit is due to Bigelow for his persistent efforts to have the surgeons at the hospital give the new discovery their endorsement; and he was himself qualified both by education and personal experience to give to the world an account of the discovery. This he did November 3, 1846, at a meeting of the American Academy of Arts and Sciences in Boston.* This was the first formal, public declaration that a safe and unfailing method of destroying pain had been discovered.

That first account makes good reading to-day, and is a witness to Bigelow's ability. Then he sent an account of the discovery to his friend Francis Boott§, a retired Boston physician, living in London. Boott communicated his information to Liston, who introduced ether at once into the London hospitals. On December 21, 1846, Liston amputated a thigh, and did an evulsion of the great toe nail, both "without the patients being aware of what was going on, so far as regards pain." Liston's enthusiasm over these performances found articulate voice: "Hurrah! Rejoice! An American dentist has used ether—inhalations of it—to destroy sensations in his

* Read before the Boston Society for Medical Improvement, Nov. 9, 1846. Published in "Boston Medical and Surgical Journal," Nov. 18, 1846.

§ Francis Boott, A. M., 1814; M. D. Edin. 1824; Fellow Linnaean Soc. London, and Amr. Acad. Died 1863.

operations, and the plan has succeeded in the hands of Hayward, Warren, and others in Boston. In six months no operation will be performed without this previous preparation. Rejoice!" The news quickly spread throughout Europe, and before the end of January, 1847, the "great American discovery" was a world-wide topic of discussion. The anaesthetic agent was first called "letheon," a name decided upon by a meeting of interested men, Bigelow, Holmes and Morton at the house of Gould; the name, however, did not suit Holmes, who wrote to Morton:

"Boston, Nov. 21, 1846.

"My Dear Sir: Everybody wants to have a hand in the great discovery. All I will do is to give you a hint or two as to names, or the name, to be applied to the state produced, and to the agent.

"The state should, I think, be called *anæsthesia*. This signifies insensibility, more particularly (as used by Linnaeus and Cullen) to objects of touch. The adjective will be anæsthetic. Thus we might say, the 'state of anæsthesia,' or the 'anæsthetic state.' The means employed would be properly called the 'anti-æsthetic agent.' Perhaps it might be allowable to say 'anæsthetic agent;' but this admits of question.

"The words *anti-neuric, aneuric, neuro-leptic, neuro-lepsia, neuro-stasis,* seem too anatomical; whereas the change is a physiological one. I throw these out for consideration.

"I would have a name pretty soon, and consult some accomplished scholar, such as President Everett, or Dr. Bigelow, Sr., before fixing upon the terms which *will be repeated by the tongues of every civilized race of mankind.* You could mention these words which I suggest, for their consideration; but there may be others more appropriate and agreeable.

"Yours respectfully,

"O. W. Holmes."

Here might end the history of that discovery, America's greatest contribution to medical science, equal perhaps to the contribution of any age and of any country. Pain, and with it the horror of anticipation, has now vanished; mental shock and the old traumatic surgery no longer exist; the surgeon has no need for hurry, for nerve-racking sympathy, for doubt, or expediency; all is now calm in the operating room; the patient is motionless, free from sensibility; the surgeon

can act with judgment, weigh consequences, invoke aid from consultants; operations are no longer the last resort, but are often an early choice, with increasing possibilities of relief and cure; all modern surgery, one of the glories of our age, takes its birth from the discovery of surgical anaesthesia. In this result nothing perhaps exceeds in the extent of importance the relationship between anaesthesia and asepsis; without the former the latter would be largely futile. The two are inseparably linked, forming the keystone upon which the science and art of surgery must depend.

The story of ether, like that of most great discoveries, is one of incredulity, hostility, and controversy. The former two sentiments have long since passed away; the last is wont to arise whenever the subject of the discoverer of etherization is broached. In the remaining pages of this chapter let us review the conclusions reached by different tribunals contemporary with the events.

The key to the controversy unquestionably lay in the desire of Morton to turn the discovery into money. On the 29th of October, 1846, he applied for a patent. Jackson, as a member of the Massachusetts Medical Society, refused at first to join in such a proceeding, on the ground that it was not good ethics. He preferred to charge Morton a fee of five hundred dollars for professional advice, and then Morton was to do as he pleased. As an afterthought, or, as he says,* "to establish legally my rights as the author of the discovery, and to enable me to give my rights to others that they might make use of my method," Jackson agreed to join Morton in the application for a patent. This patent was issued November 12, and Jackson agreed to assign all his interest in the invention or discovery in consideration of a ten per cent income from

* "A Manual of Etherization, etc.," by Charles T. Jackson, M. D., F. G. S. F., page 53.

the proceeds on all sales of licenses. Later he demanded twenty-five per cent. Both demands were refused, and thereupon followed the controversy. Here is a letter from Morton:

"19 Tremont St., Boston, Dec. 14, 1846."

"To the President and Trustees of the Massachusetts General Hospital:

"Gentlemen,—Most, if not all of you, may be aware that I have, both privately and publicly, declared that it is not my intention or desire to receive from benevolent infirmaries, nor from persons in destitute circumstances, any compensation for the employment of the new discovery whereby pain may be prevented, or alleviated, in surgical operations. Long convinced of the excellence of the charitable establishment over which you preside, and of its great and increasing importance in the service of humanity, I beg leave to respectfully inform you that I shall be happy to present to the Massachusetts General Hospital, if it be agreeable for the President and Trustees to accept the same, the fullest right, under the letters patent granted to me by the Government of the United States, to use the discovery above mentioned for the benefit of indigent patients, the sick and suffering poor, and other persons at the institution.

"With great respect, I am, gentlemen,

"Your most obedient servant,

"W. T. G. Morton."

For the benefit of the curious I append a list of more than sixty addresses, reports, medical-journal and newspaper articles. I can assure such persons that they will rise from such studies with feelings of utter disappointment, if not actual chagrin. Sundry most respectable persons are dragged into the witness-box and made to contradict each other. The King of Prussia and the French Academy of Sciences became involved in the controversy; the Congress of the United States was petitioned, and the Supreme Court invoked; the American Medical Association became a partisan, and the Massachusetts General Hospital Trustees furnished a testimonial. Finally, after twenty-five years, a monument was dedicated, almost within sight of the scene of the discovery, to commemorate

the event, yet it fails to name the discoverer.* Since 1846 two generations have come. Nearly all those who were active participants in the events of the ether discovery and its controversy are now dead. The following physicians, still living (1905), were present at the first surgical operation under anesthesia, October 16, 1846, Massachusetts General Hospital: Robert Thompson Davis, M. D., '47, Fall River, Mass.; Tappan Eustis Francis, A. B., '44, M. D., '47, Brookline, Mass.; Benjamin Shurtleff, M. D., '48, Napa, Cal.; Isaac Francis Galloupe, M. D., '49, Lynn, Mass.

The semi-centennial of the birth of anaesthesia came in our day.§ Nine years ago the Bigelow amphitheatre† at the Massachusetts General Hospital was crowded as was Warren's operating room in 1846. This time, however, the benches formerly filled by those ancient students were crowded by representatives of the whole scientific world. By those men Morton's name alone was rehearsed. We have lived to see fulfilled the prophetic words of the venerable Jacob Bigelow, "The suffering and now exempted world have not forgotten the poor dentist who, amid poverty, privation, and discouragement, matured and established the most beneficial discovery which has blessed humanity since the primeval days of Paradise".

Briefly, then, the steps leading up to this tardy verdict are as follows: The fourteen years' patent secured by Morton was soon found to be worthless. Jackson then appeared in a new rôle. He repudiated the contract and claimed the discovery as his own. His first contention was priority, and he used these words:‡

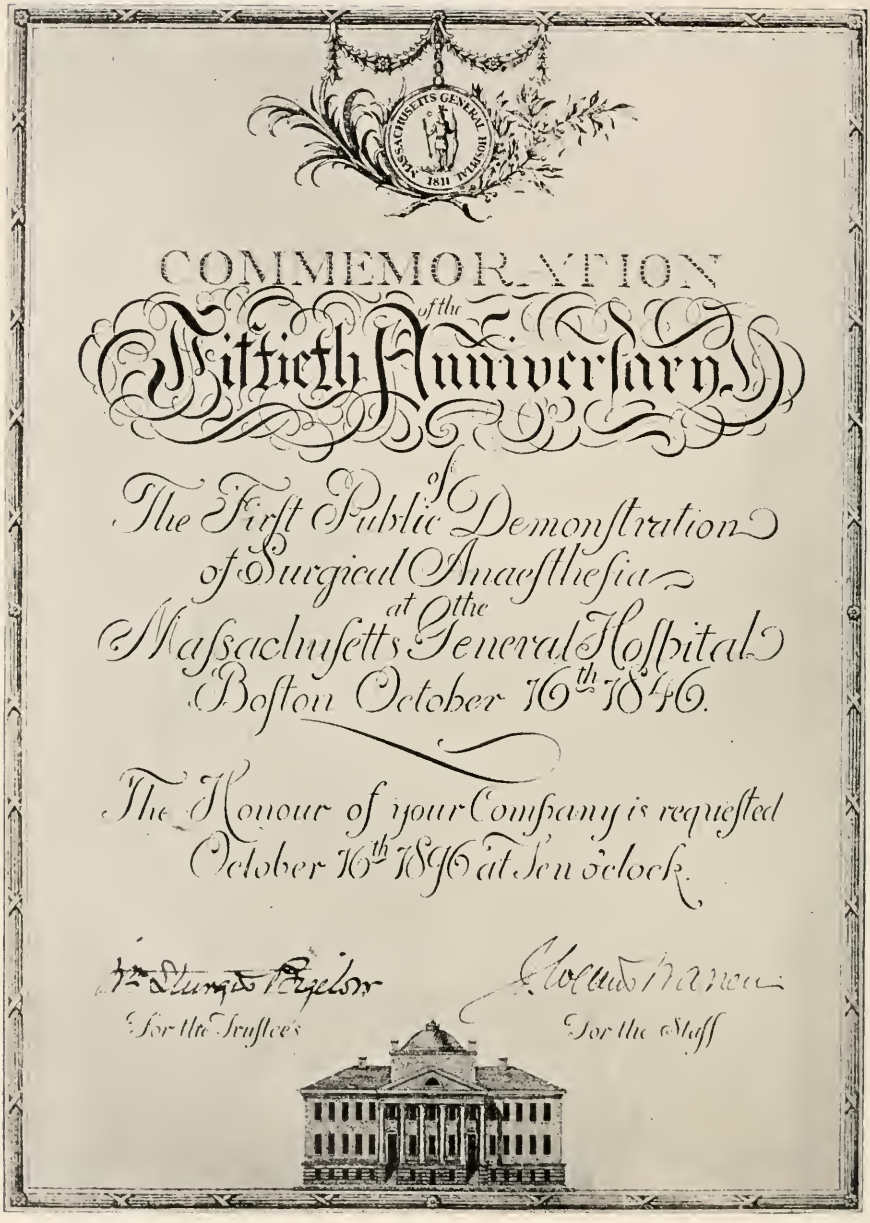
---

* Said Oliver Wendell Holmes: "Inscribe it to Either."

§ Semi-centennial of Anæsthesia, Massachusetts General Hospital, Boston, Oct. 16, 1896.

† Now the "Zander room."

‡ "A Manual of Etherization, etc.," By Chas. T. Jackson, M. D., F. G. S. F., 1861. Part of a letter sent to Von Haemboldt in 1851.



Reduced facsimile of invitation to the Fiftieth Anniversary of the First Public Demonstration of Surgical Anesthesia at the Massachusetts General Hospital.

"The circumstances were as follows: In the winter of 1841-2 I was employed in giving a few lectures before the Mechanics' Charitable Association in Boston, and in my last lecture, which I think was in the month of February, I had occasion to show a number of experiments in illustration of the theory of volcanic eruptions, and for these experiments I prepared a large quantity of chlorine gas, collecting it in gallon glass jars over boiling water. Just as one of these large jars was filled with pure chlorine it overturned and broke, and, in my endeavors to save the vessel, I accidentally got my lungs full of chlorine gas, which nearly suffocated me, so that my life was in imminent danger. I immediately had ether and ammonia brought, and alternately inhaled them with great relief.

"The next morning my throat was severely inflamed, and very painful, and I perceived a distinct flavor of chlorine in my breath and my lungs were still much oppressed. I determined therefore to make a more thorough trial of ether vapor, and for that purpose went into my laboratory, which adjoined my house in Somerset Street, and made the experiment from which the discovery of anæsthesia was deduced. I had a large supply of perfectly pure washed sulphuric ether (oxide of ethyle), which was prepared in the laboratory of my friend Mr. John H. Blake, of Boston. I took a bottle of that ether and a folded towel, and having seated myself in a rocking-chair, placed my feet in another chair so as to secure a fixed position as I reclined in the one in which I was seated. Soaking my towel in ether I placed it over my nose and mouth, so as to allow me to inhale the ether vapor mingled with air, and began to inhale the vapor deeply into my lungs. At first it made me cough, but soon that irritability ceased, and I noticed a sense of coolness followed by warmth, fullness of the head and chest, with giddiness and exhilaration, numbness of the feet and legs, followed by a swimming sensation as if afloat in the air. This was accompanied with entire loss of feeling, even of contact with my chair. I noticed that all sensation of pain had ceased in my throat, and the sensations which I had were of the most agreeable kind. Much pleased and excited, I continued the inhalation of the ether vapor, and soon fell into a dreamy state, and then became unconscious of all surrounding things. I know not how long I remained in that state, but suppose that it could not have been less than a quarter of an hour, judging from the degree of dryness of the cloth which during the stage of unconsciousness had fallen from my mouth and nose, and lay upon my chest.

"As I became conscious, I observed that there was no feeling of pain in my throat, and my limbs were still deeply benumbed, as if the nerves of sensation were fully paralyzed. A strange thrilling now began to be felt along the spine, but it was not in any way disagreeable. Little by little sensation began to manifest itself, first in the throat and body, and

gradually it extended to the extremities; but it was some time before full sensation returned and my throat became really painful.

"Reflecting on these phenomena, the idea flashed into my mind that I had made the discovery I had for so long a time been in quest of—a means of rendering the nerves of sensation temporarily insensible, so as to admit of the performance of a surgical operation on an individual without his suffering pain therefrom.

"That I did draw this inference, and did fully declare my unqualified belief both of the safety and efficiency of this method of destroying all sensation of pain in the human body during the most severe surgical operations no one doubts, and it is fully proved by abundant legal evidence, which has never been impeached or doubted in any quarter.

"I beg leave to refer you again to the evidence of Dr. William F. Channing, a man of science, Fellow of the American Academy of Arts and Sciences, son of the late Dr. William E. Channing, our most eminent divine; to the testimony of Dr. S. A. Bemis, one of the most eminent dentists; to the letter of John H. Blake, Esq., a distinguished chemist, and to the testimony of Mr. Henry D. Fowle, one of our best and most faithful apothecaries. Their evidence with that of my worthy friend and former pupil, Mr. Joseph Peabody, élève ingenieur à l'Ecole des Mines de France, prove that I had made this discovery long before any other person had ever tried a single experiment of the kind.

"In the rapid operations of the mind, it is not always easy to trace (in memory) the exact method of thought by which we suddenly arrive at great truths; but so far as I can trace the reasoning that rapidly flowed through my mind, it was based upon principles well understood by all educated physicians and physiologists.

"I knew that the nerves of sensation were distinct from those of motion, and of organic life, and that one system might be paralyzed without necessarily and immediately affecting the others. I had seen often enough in my medical practice, the nerves of sensation paralyzed without affecting those of motion, and those of motion paralyzed without affecting those of sensation, and both motion and sensation paralyzed without affecting the ganglionic nerves or those of organic life.

"I knew, also, that the nerves of sensation are stationed as sentinels near the exterior of our bodies, to warn us of danger from external causes of injury, and that there is no feeling in the internal portions of our bodies. I knew, also, that when the knife is applied in surgical operations, that there is little sense of pain in any parts beneath the skin (the trunks of nerves only excepted). This my own surgical experience, as well as that of others long since demonstrated, and the philosophy of those physiological phenomena was made known to the medical world by Charles Bell, Majendie, and other eminent anatomists and physiologists in Europe.

"Having confided my discovery to twelve of my friends, most of whom

are gentlemen devoted to science, and some of them physicians and dentists, I considered it safe, so far as priority of discovery was concerned. It was my intention to revisit Europe, and to bring out this discovery in the great hospitals of Paris, where I felt confident I should be treated with courtesy and fairness; but I was at the time actively engaged in the Geological Survey of the State of New Hampshire; and while my Report was in press, was called upon to explore the wilderness of Lake Superior land district, for copper mines, so that I had not a month that could be spared for a voyage to Europe. Hence my procrastination."

Jackson then introduced a second claim, namely, that Morton acted as a "nurse" under his directions. He says: "Under these circumstances, I employed a dentist, a nominal medical pupil of mine, Mr. W. T. G. Morton, to make a trial of my discovery, in dental surgery, which he consented to do, if I would take the entire responsibility. This I did at once before two of my chemical pupils*." This was the Eben H. Frost case previously related. "I then engaged this dentist to go to Dr. John C. Warren, and ask him to test the ether in a more severe operation, at the Hospital. The reason why I did not go in person, was that I was at that time engaged in chemical work for others, which could not be left. I proposed to see Dr. Warren a few days afterwards, as I did. Mr. Morton did as directed, and came at once and reported to me that 'Dr. Warren had consented to try the experiment' * * * I was not informed when the trial of the ether was to be made at the Hospital, and it was done the next day, without notifying me that I might attend and witness the effects." This was the October 16th test. Then follows an accusation that Morton did not tell Warren he had been sent by Jackson, and of Morton's secrecy about the nature of the agent used. He relates Warren's request that he come to the Hospital to administer the ether, as he did "not like to have such a quackish fellow as Morton about the Hospital." This request Jackson was not able to fulfill, as he was about to leave for Mary-

* George O. Burnes and James McIntire.

land, but he "would fully instruct Morton and send him to administer the ether." Jackson further states that he informed Warren of the nature of the "compound" used by Morton. Jackson did not attend an operation under ether until November 21st, 1846, and again on January 2, 1847; a part of this time he was absent from the state. He wrote a letter to the Academy of Science of France under date November 13, 1846, but did not mail it until December 1st, being assured by Morton that "all should be set right", if he would wait. This first letter for the Academy was in part as follows:

"Boston, 13th November, 1846.

"I ask permission to communicate, through you, to the Academy of Sciences, a discovery which I have made, and which I believe to be important for the relief of suffering humanity, and of great value in surgical art. It is five or six years since I noticed the peculiar state of insensibility into which the nervous system is plunged by the inhalation of the vapor of pure sulphuric ether, which I inhaled in large quantities, first for experiment, and afterwards when suffering from a severe inflammation, caused by the inhalation of chlorine. I have recently made use of this fact, by inducing a dentist of this city to administer the vapor of ether to persons whose teeth he was about to extract. It was observed that these persons did not suffer any pain during the operations, and that no inconvenience resulted from the administration of ether.

"I next urged this dentist to go to the Massachusetts General Hospital, and administer the ether vapor to a patient who was to undergo a painful surgical operation. The result was, that the patient did not feel the least pain, and did well afterwards. An operation near the jaw, the amputation of a limb, and the excision of a tumor were the subjects of the first surgical experiments.

"Since then numerous surgical operations have been performed, on different patients, with like success, and always without pain. The patients have convalesced well, not having suffered any nervous shock.

"I desire that the Academy of Sciences will have the goodness to appoint a commission to make the necessary experiments, in order to prove the exactitude of the assertions which I address to you, concerning the remarkable effects produced by the inhalation of ether vapor.

"One may very conveniently breath this vapor, by dipping a large sponge in ether, placing it in a short conical tube, or in a funnel, and drawing the atmospheric air into the lungs, through the sponge thus saturated with ether. The air may be ejected by the nose, or valves may be

placed on the tube or funnel, so that the breath may not traverse the sponge and weaken the ether by aqueous vapor.

"At the end of a few minutes the patient falls into a very peculiar state of sleep and may be submitted to any surgical operation without his feeling the least pain; his pulse becomes generally a little more rapid, and his eyes shine, as from the effect of a peculiar excitement. When he recovers from this state, in a few minutes, he will say to you that he has been asleep and has dreamed.

"Ordinarily weak (alcoholic) ether will not produce the proper effect. The patient will only be made drunk by it, and will suffer headache afterwards. We should use, therefore, only the most highly rectified ether.

"If a dentist extracts teeth in the evening, he should employ a Davy safety lamp, for a naked flame might cause an explosion if brought near the mouth.

"In the administration of ether vapor it is important to have it in large volume, so that it may be inhaled freely and produce its effects promptly, because we thus avoid all disagreeable sensations; but there is no danger to be feared from prolonged inhalation of ether vapor, provided that atmospheric air also is properly admitted. In prolonged operations we apply the ether vapor several times, at proper intervals, so as to keep the patient in this (ethereal) sleep.

"Charles T. Jackson."

Jackson had a wide acquaintance among the scientists of Europe, and his friend and former teacher, M. Elie de Beaumont, became his champion before the French Academy. President Bonaparte soon bestowed the Cross of the Legion of Honor upon Jackson as the discoverer of ether.

During the year 1847-48 the controversy between Morton and Jackson was waged bitterly, as the following documents tell:

"To the Honorable the Senate and House of Representatives of the United States of America in Congress Assembled:

"Your petitioner, William T. G. Morton, respectfully represents, that he is a dentist in the city of Boston; that in the year 1846, and for several years previously thereto, he was in the prosperous and lucrative practice of his profession in that city; his actual annual receipts from his business, as his accounts will show, being between nine and ten thousand dollars.

"That his occupation obliging him to see frequent instances of frequent suffering, he was, as many others had been, induced to consider whether there might not be some means of alleviating such sufferings, and rendering operations less painful to those obliged to submit to them.

"That, in pursuance of this object, he examined such known and approved treatises on materia medica as he could obtain, and consulted with the most learned persons to whom he could get access, but found the scientific knowledge on this subject wholly vague and unsatisfactory; that, nevertheless, he continued the investigation, and, gathering all the information he could, was led, step by step, after many examinations and experiments, to the belief that sulphuric ether, properly administered, might produce partial if not total insensibility; that, desirous to verify his belief by actual experiment on the human system, and finding the idea prevalent among the scientific that any application which would be productive of such effects would be injurious to health, if not fatal to life, he made the experiment upon himself, and, after an unconsciousness of several minutes, awoke with no injury to health; that, thus confirmed in his views, he proceeded, against much opposition and amidst many obstacles, until at last, in the presence of the most eminent surgeons and physicians of a public institution, and on a public occasion, he was enabled to manifest the truth of his conception, and exhibited a patient submitting to an amputation of a leg, without the slightest sentiment of pain, or the least injury to general health in consequence of the application which produced this insensibility.

"Your petitioner would further state, that, interested in the investigations which resulted in this discovery, he devoted himself exclusively to them, to the neglect of his ordinary and regular business, in consequence of which his practice became almost entirely lost to him; that his experiments and the various arrangements and preparations which the calls upon him from all parts of the country, as well as from foreign countries, obliged him to make, and which a belief in the validity of his patent induced him to suppose would not be unrequited, were very expensive, and involved him deeply in debt; that the patents which he obtained, though legally valid, were in fact wholly valueless in a pecuniary sense; and that he finds himself now, after all his outlays, exertions, and endeavors, with his practice greatly abridged, his reputation injured by the efforts of those who opposed with great warmth the introduction of his discovery; his health impaired by mental anxiety and over-exertion: himself reduced to poverty, embarrassment, and pecuniary distress; and probably the only being living who has been a sufferer from a discovery which enables the world to rejoice in an exemption from many sufferings.

"Your petitioner states only facts which are well and widely known. He therefore respectfully prays your honorable body, that—considering the nature of the discovery; the benefit which it confers, and must continue to confer so long as nature lasts, upon humanity; the price at which your petitioner effected it, in the serious injury to his business; the detriment to his health; the entire absence of any remuneration from the privileges under his patent, and that it is of direct benefit to the govern-

ment, by its use in the army and navy—you should grant him such relief as might seem to you sufficient to restore him at least to that position in which he was before he made known to the world a discovery which enables man to undergo, without the sense of pain, the severest physical trials to which human nature is subject.

"And your petitioner will ever pray, &c.

"Wm. T. G. Morton."

"To the Senate and House of Representatives of the United States in Congress Assembled:

"The undersigned begs leave to represent, that, whereas a memorial has been presented to the Congress of the United States by William Thomas Green Morton, of the city of Boston, in the State of Massachusetts, representing that in the year of our Lord one thousand eight hundred and forty-six, he, the said Morton, made, in the city of Boston aforesaid, a discovery by which the human body is rendered insensible to pain during surgical operations, and during other serious and violent affections, by means of the vapor of sulphuric ether inhaled into the lungs,—praying also for a national remuneration or reward for making the said discovery, and for its practical application; and whereas the said discovery was made by the undersigned, without the knowledge of the said Morton, and without the co-operation or assistance of any person whomsoever, and was communicated by the undersigned to various persons, from the spring and autumn of eighteen hundred and forty-two to the thirtieth day of September, eighteen hundred and forty-six inclusive, and on the said thirtieth day of September was also communicated by the undersigned to the said Morton, he, the said Morton, being previous to the said communication of the discovery to him, wholly ignorant of the anæsthetic properties and effects of sulphuric ether aforesaid; and whereas the undersigned did also, on the thirtieth day of September, eighteen hundred and forty-six, devise and commit to the said Morton the performance of an experiment for the verification of the said discovery, so far as the extracting of teeth is concerned; and whereas the said Morton, acting in strict conformity with the instructions and upon the exclusive and expressly-assumed responsibility of the undersigned, did, to the extent of a painless extraction of a tooth, successfully verify the said discovery; and whereas the undersigned did, shortly afterwards, cause the discovery to be further verified by the surgeons of the Massachusetts General Hospital, in the first painless capital operation ever performed under the influence of the ether-vapor; and whereas the signature of the undersigned to certain letters-patent, taken out in the joint names of the undersigned and of the said Morton, declaring the discovery to be their joint invention, was obtained through the representation of Robert H. Eddy, Esq., of said Boston, the solicitor by whom the said letters-patent were procured, and copartner with the said Morton in the profits thereof, that the undersigned 'might

lose all his credit as a discoverer,' if he did not consent to become a party to the said letters-patent; and whereas the undersigned, after being instructed by eminent legal counsel that the said Morton had not rendered himself in any sense a joint discoverer, by reason of the painless extraction of a tooth as aforesaid, and that he had not thereby acquired any right either to an exclusive patent or to participation with the undersigned in any patent upon the said discovery, did publicly repudiate all connection with the said letters-patent, and did refuse any part of the proceeds arising from the sale of licenses under the same; and did, as he originally intended, give the discovery freely to the world, to the full extent of his interest; evidence of all which is herewith submitted. The undersigned does, therefore, earnestly remonstrate against the memorial of the said Morton, and prays that his petition may not be granted; and that there may not be, on the part of the Congress of the United States, any recognition whatever of his claims to the said discovery.

"CHARLES T. JACKSON."

"Washington, D. C., Jan. 29, 1849."

"TO THE SENATE AND HOUSE OF REPRESENTATIVES OF THE UNITED STATES OF AMERICA, IN CONGRESS ASSEMBLED."

"The undersigned, Physicians and Surgeons of the Massachusetts General Hospital, beg leave to represent,—

"That, in the year 1846, a discovery was made in the city of Boston, by which the human body is rendered insensible to pain, during surgical operations, and during other serious and violent affections, by means of the vapor of ether inhaled into the lungs.

"That a patent for this discovery was taken out by two citizens of Boston, by whom the first satisfactory experiments on the prevention of pain by this means had been made; and the first capital operations, conducted under the influence of this agent, were performed in the Massachusetts General Hospital by the surgeons of that institution.

"That the success of this method of preventing pain has been abundantly and completely established by a hundred and fifteen operations performed in said Hospital during the last year, and by a still greater number out of it in the city of Boston.

"And, in all cases within the knowledge of the undersigned, it has greatly mitigated, or wholly prevented, the pain, when skillfully administered, and in no case has any fatal or disastrous consequence followed its use within their observation; and although inconveniences and temporary disturbances of the nervous system have sometimes followed its application, yet these are exceptions to a general rule, and are not more common than those which result from the employment of other powerful medicinal agents, and are incomparably less distressing than the evils they are employed to obviate.

"The undersigned have reason to believe, that, since the introduction

of this process, some thousands of persons have inhaled ether, in Boston and its vicinity, with impunity and benefit; that its value is already recognized, and its employment into most parts of Europe; that the use of the process ought to be, and by judicious arrangements probably will be, extended into all parts of the United States; and that no discovery in medical science, during the present century, has relieved as much suffering, and conferred so great a benefit on humanity, as the discovery of the power and application of ether.

"The undersigned are aware, that the power of ether to produce insensibility, and even death when improperly used, was known in Europe many years ago. They are also aware that other æriform bodies have been experimented on, and the vapor of ether itself unsuccessfully tried, by other individuals, in surgical operations; but they are satisfied, that the safety of the process, and the effectual mode of applying it, were first made known in Boston in 1846.

"Understanding that the use of this important discovery is now restricted by letters patent granted from the office of the Secretary of State, and believing that it is the policy of wise governments to diffuse among their constituents the blessings of such discoveries as tend to alleviate human suffering, and, at the same time, to reward those who have conferred such benefits upon the world,—the undersigned respectfully pray, that such sums as shall be thought adequate may be paid by the government of the United States to those persons who shall be found, on investigation, to merit compensation for the benefit conferred on the public by this discovery, and on condition of the relinquishment by them of any patent right they may hold restricting its use.

(Signed)

"John C. Warren.
"Jacob Bigelow.
"Geo. Hayward.
"Enoch Hale.
"S. D. Townsend.
"John D. Fisher.
"H. I. Bowditch.
"O. W. Holmes.
"J. Mason Warren.
"Samuel Parkman.
"Henry J. Bigelow."

"*Boston, Nov.* 20, 1847."

The authorities of the Massachusetts General Hospital appointed a committee to consider the whole question. Their conclusions were these:

"1st. *Dr. Jackson does not appear at any time to have made any discovery, in regard to ether, which was not in print in Great Britain some years before.*

"2nd. *Dr. Morton, in* 1846, *discovered the facts before unknown, that ether would prevent the pain of surgical operations; and that it might be given in sufficient quantity to effect this purpose, without danger to life.*

He first established these facts by numerous operations on teeth, and afterwards induced the surgeons of the Hospital to demonstrate its general applicability and importance in capital operations.

"3rd. *Dr. Jackson appears to have had the belief, that a power in ether to prevent pain in dental operations would be discovered. He advised various persons to attempt the discovery. But neither they nor he took any measures to that end; and the world remained in entire ignorance of both the power and safety of ether, until Dr. Morton made his experiments.*

"4th. *The whole agency of Dr. Jackson in the matter appears to consist only in his having made certain suggestions, which led or aided Dr. Morton to make the discovery,—a discovery which had for some time been the object of his labors and researches.*"

LETTER TO DR. MORTON.

"Boston, May 12, 1848.

"Dear Sir: At a meeting of the Board of Trustees of the Massachusetts General Hospital, a few weeks since, it was formally suggested, that a limited subscription of a thousand dollars shall be raised for your benefit, in acknowledgement of your services in the late ether-discovery; no one to be asked to subscribe more than ten dollars. We consented to act as a Committee to receive and apply the proceeds of this subscription. The proposed sum having been obtained, we have now the pleasure of transmitting it to you. We also enclose the subscription-book in a casket which accompanies this note. Among its signatures you will find the names of not a few of those most distinguished among us for worth and intelligence;* and it may be remarked, that it is signed by every member of the Board of Trustees.

"You will, we are sure, highly value this *first* testimonial, slight as it is, of the gratitude of your fellow-citizens. That you may hereafter receive adequate national reward is the sincere wish of your obedient servants,

"Samuel Frothingham.
"Thos. B. Curtis."

"To Dr. William T. G. Morton."

DR. MORTON'S REPLY.

"Boston, May 15, 1848.

"Gentlemen: I need hardly say, that your communication of the 12th

---

*Josiah Quincy, Jr., Abbott Lawrence, S. A. Eliot, Amos Lawrence, William Appleton, J. I. Bowditch, R. G. Shaw, Charles Amory, William Sturgis, John Bryant, J. A. Lowell, Thomas Dwight, Theodore Lyman, F. H. Bradlee, Robert Hooper, Charles Jackson, James Jackson, Marcus Morton, G. C. Shattuck, George Hayward, Thomas Lee, J. C. Warren, W. H. Prescott, Rufus Choate, William Ropes, C. F. Adams, Daniel Webster, John Homans, R. H. Dana, Augustus Thorndike, Russell Sturgis, H. H. Hunnewell, J. P. Higginson, and about thirty others.

inst., and the accompanying casket, subscription-book, and donation, have been received by me with gratification of no ordinary degree.

"Apart from the positive value of the gifts, the kind feeling which has led to this manifestation on the part of so many of the first citizens of Boston has affected me in a manner that I am not likely soon to forget. The circumstances in which I have been placed for some time past give them an additional value; and by my children the testimonial will be appreciated hardly less than by myself.

"In recognizing among the names those of each of the Trustees of the Massachusetts General Hospital, I am bound to acknowledge this renewal of my indebtedness to that institution. It was the first to receive, verify, sustain, and promulgate the ether-discovery; and, from the earliest, I have received from its officers, surgeons, physicians, and trustees, nothing but constant courtesy, liberality, and kind consideration.

"Allow me to acknowledge your personal kindness in acting as a Committee for the purposes of subscription, and the tasteful manner in which you have given to it an endearing value and significance.

"You are pleased to speak of my services as deserving a national reward. I am glad to have your concurrence and sympathy in this opinion; and it is not unknown to you, that, if received, it would be to me, not only a reward, but an indemnification and relief.

"Respectfully, your obliged and obedient servant,

"William T. G. Morton."

"To Messrs. Samuel Frothingham and Thomas B. Curtis."

Morton's remaining years were pathetic. After the failure of the patent he tried to interest the Federal Government in ether anaesthesia for military purposes, but the government went on using it without regard to patent rights, and Morton's licensees immediately held him accountable for their losses. Lawsuits and litigations resulted only in failure for all these unfortunates. Morton's appeal to Congress brought a recommendation that a grant of one hundred thousand dollars be made to him from the national treasury. Congress procrastinated, and finally, in 1854, Morton asked President Pierce to intervene. Just as this step was about to bear fruit, the Secretary of war, Jefferson Davis, advised the President to require, as a prerequisite, a suit and judgment against a government surgeon for using ether without compensation to the patentee. In such a suit Morton was successful. Then came

a new administration, and the same course had to be pursued again. This time the defendant was the New York Eye Infirmary, and Morton was defeated. To add to his discomfiture the American Medical Association passed resolutions of censure against him in the following terms:

"Whereas, In the appropriation bill now pending in Congress is a claim donating to Dr. W. T. G. Morton, of Boston, the sum of two hundred thousand dollars as a recognition of his services in introducing sulphuric ether as an anæsthetic agent; and

"Whereas, the said Dr. Morton, by suits against charitable medical institutions for infringements of an alleged patent covering all anæsthetic agents, not claiming sulphuric ether only, but the state of anæsthesia, however produced, as his invention, has by this act put himself beyond the pale of an honorable profession and of true laborers in the cause of science and humanity; therefore

"Resolved, That the American Medical Association enter their protest against any appropriation to Dr. Morton, on the ground of his unworthy conduct, also because of his unwarrantable assumption of a patent right in anæsthesia, and further because private beneficence in Boston, New York, Philadelphia, and other places has already sufficiently rewarded him for any claim which he may justly urge.

"Resolved, That a copy of these resolutions, if passed, be forwarded to the chairman of the Committee on Ways and Means."

Dr. Mauran, of Rhode Island, moved the adoption of both resolutions, which were carried.

These resolutions were passed by a "snap vote" just before final adjournment, and as one reads the proceedings of that convention he can but feel regret. A question of this magnitude, one which had taxed the maturer judgment of scientific men in Europe and this country should not have received such hasty action.* Morton's suit was undertaken as a test

* The temper of this meeting is shown by the following incident: J. C. Warren, a delegate to the Association, carried and distributed upon the seats a considerable number of printed circulars inviting a subscription from any who would like to subscribe to a monument for Morton. On his return to his room late in the evening he found these circulars carefully collected and placed upon his table. The next day the hall was

case by direction of the government. Foreign scientific bodies were more liberal than the American Medical Association. The order of Saint Vladimir was bestowed on Morton by Russia; the Order of Vasa by Sweden; and from France came this:

AWARD OF THE FRENCH INSTITUTE.

"In March, 1850, the French Institute pronounced an award in the matter of the ether-discovery. The first prize of medicine and surgery, for the years 1847 and 1848, was decreed to Messrs. Jackson and Morton jointly. The language of the award is as follows: 'Mr. Jackson and Mr. Morton were necessary to each other. Without the earnestness, the preconceived idea, the courage, not to say the audacity of the latter, the fact observed by Dr. Jackson might have long remained unapplied; and, but for the fact observed by Mr. Jackson, the idea of Mr. Morton would perhaps have been barren and ineffectual.' Two thousand five hundred francs are therefore awarded to Mr. Jackson 'for his observations and experiments on the anæsthetic effects of the inhalation of ether'; and the same sum to Mr. Morton 'for having introduced this method into surgical practice, pursuant to the suggestions of Mr. Jackson.'"

Few persons were better qualified to know the true situation than Henry J. Bigelow. Here is a letter from him, written while this matter was recent history:

"January 26, 1848.

"Dear Sir: I believe most fully that Dr. Morton deserves any reward Congress may grant to the discoverer; because, although many people have *thought* that a man could be intoxicated beyond the reach of pain, Dr. Morton alone *proved* this *previous possibility* to be *a certainty*, and *safe*. A tabular form will make the matter plainer than words:—

Before October, 1846, who made the suggestion? Here is the only ground of dispute.	Discovery in October, 1846. Consecutive experiments by Morton.	After October, 1846, *Morton alone* took the responsibility of danger and proved that it was 1st. *Certain.* 2d. *Safe.*

"The last two points, namely, the consecutive experiments, and their confirmation, which nobody denies to Morton, make him, in my eyes,

---

flooded with pamphlets advocating Well's claim as the discoverer of anæsthesia.

the discoverer. The only doubt is as to who made the suggestion. To me this is of no importance. Dr. Jackson says: 'I did. I told Mr. Morton to try the experiment, and unless I had so told him he would never have tried it.' Dr. Jackson adds: 'I first tried ether when I was suffering from chlorine, in 1842. I afterwards recommended it to Mr. Peabody.' But Dr. Morton confutes even these positions. He says to Dr. Jackson: 'I show, by the evidence of Dr. Gould, Mr. Wightman, and Mr. Metcalf, that I was experimenting with ether before the interview in which you claim to have brought it to my notice. In 1842 you only re-discovered what was before clearly in print in Pereira's Materia Medica. You claim that you told Mr. Peabody what you *knew* of ether. Now you could not *know* it. You have stated all your grounds of deduction, and the widest inference you could draw from them is a suspicion of the properties of ether; and a suspicion in science, an unconfirmed theory, amounts to nothing. Finally what you claim to have discovered in 1842 you kept to yourself four years. Do you expect the world to believe you knew its value? Do you expect it to reward you for letting people suffer during that length of time? Besides, the suggestion of anæsthetic agencies occurred to Davy; especially was it followed out, though unsuccessfully, by Horace Wells, who, disgusted with failure, abandoned his attempts.' These and others had hypotheses as well as Dr. Jackson. Morton alone proved the hypothesis. Without Morton there is no evidence that the world would have known ether to the present day. I believe this covers the ground of important argument and difference in the pamphlets. . . .

"Respectfully your obedient servant,

"Henry J. Bigelow."

Morton died of apoplexy in New York, on July 15, 1868, at the age of forty-nine. Jackson died insane in 1880. Let me conclude this ether story with the familiar words of Oliver Wendell Holmes, addressed to his class of medical students in 1847 at the Harvard Medical School:

"Here almost within the present year, the unborrowed discovery first saw the light, which has compassed the whole earth before the sun could complete his circle in the zodiac. There are thousands who never heard of the American Revolution, who know not whether an American citizen has the color of a Carib or a Caucasian, to whom the name of Boston is familiar through this medical discovery. In this very hour while I am speaking how many human creatures are cheated of pangs which seemed inevitable as the common doom of mortality; and lulled by the strange

magic of the enchanted goblet, held for a moment to their lips, into a repose which has something of ecstasy in its dreamy slumbers.

"The knife is searching for disease, the pulleys are dragging back dislocated limbs, nature herself is working out the primal curse which doomed the tenderest of her creatures to the sharpest of her trials, but the fierce extremity of suffering has been steeped in the waters of forgetfulness, and the deepest furrow in the knotted brow of agony has been smoothed forever."

BIBLIOGRAPHY.

1. "Insensibility during Surgical Operations, produced by Inhalation." By H. J. Bigelow, M. D. Boston Medical and Surgical Journal, Nov. 18, 1846.

2. "The Inhalation of an Ethereal Vapor to prevent Sensibility to Pain during Surgical Operations." By J. F. Flagg, M. D. Boston Medical and Surgical Journal, Dec. 2, 1846.

3. "Inhalation of Ethereal Vapor for the Prevention of Pain in Surgical Operations." By John C. Warren, M. D., &c. &c. Boston Medical and Surgical Journal, Dec. 9, 1846.

4. "Insensibility during Surgical Operations, produced by Inhalation." By H. J. Bigelow, M. D. (in reply to Dr. J. F. Flagg). Boston Medical and Surgical Journal, Dec. 9, 1846.

5. "Inhalation of Ether." By J. Mason Warren, M. D. Boston Medical and Surgical Journal, March 24, 1847.

6. Circular, by W. T. G. Morton. pp. 88. Boston, March, 1847.

7. "History of the Discovery of the Application of Nitrous Oxide Gas, Ether, and other Vapors, to Surgical Operations." By Horace Wells. pp. 26. Hartford, March, 1847.

8. "Some Account of the First Use of Sulphuric Ether by Inhalation in Surgical Practice." By George Hayward, M. D. pp. 8. Boston, April, 1847.

9. "Discovery by Charles T. Jackson, M. D., of the Applicability of Sulphuric Ether in Surgical Operations." By Martin Gay, M. D. pp. 48. Boston, June, 1847.

10. "A Review of Dr. M. Gay's Statement of Dr. C. T. Jackson's Claims to the Discovery, &c. &c." By J. B. S. Jackson, M. D. Boston Medical and Surgical Journal, June 30, 1847.

11. "Some Account of the Letheon; or, Who is the Discoverer?" By Edward Warren. pp. 88. Boston, August, 1847.

12. "Mémoire sur la Découverte du Nouvel Emploi de l'Ether Sulfurique;" par W. T. G. Morton, de Boston, Etats Unis; suivi des Pièces Justificatives. pp. 60. Paris, 1847.

13. Report of the Board of Trustees of the Massachusetts General Hospital, presented to the Corporation at their annual meeting, Jan. 26, 1848.

14. "Account of a New Anæsthetic Agent as a Substitute for Sulphuric

Ether in Surgery and Midwifery. By J. Y. Simpson, M. D., F. R. S. E., &c. pp. 24. Reprinted, New York, January, 1848.

15. "Reprint of the Report of the Trustees of Massachusetts General Hospital, with a History of the Ether Discovery, and Dr. Morton's Memoir to the French Academy." Edited by R. H. Dana, jun.; pp. 48. Boston, March, 1848.

16. "Rapport des Administrateurs de l'Hôpital Général de Massachusetts, suivi de l'Histoire de la Decouverte de l'Ether, &c. &c." R. H. Dana, jun., éditeur. pp. 144. Cambridge, 1848.

17. "A Defence of Dr. Charles T. Jackson's Claims to the Discovery of Etherization; containing Testimony disproving the Claims set up in Favor of Mr. W. T. G. Morton in the Report of the Trustees of the Massachusetts Hospital, and in No. 201 of Littell's Living Age." By Joseph L. and Henry C. Lord. pp. 37. Boston, June, 1848.

18. "The Ether Controversy: Vindication of the Hospital Report of 1848." By N. I. Bowditch. pp. 32. Boston, July, 1848.

19. Reports of the First Exhibition of the Worcester County Mechanics' Association at Worcester, September, 1848. pp. 74.

20. "Ether and Chloroform; their Discovery and Physiological Effects, &c." By H. J. Bigelow, M. D. pp. 45. Boston, November, 1848.

21. Memorial addressed to the Trustees of the Massachusetts General Hospital, in Behalf of C. T. Jackson, M. D., by his attorneys, J. L. and H. C. Lord. pp. 27. Boston, December, 1848.

22. Report of the Select Committee of the Congress of the United States, to whom was referred the Memorial of William T. G. Morton, asking Compensation from Congress for the Discovery of the Pain-subduing Property of Sulphuric Ether. pp. 46. Washington, D. C., Feb. 23, 1849.

23. Minority Report of the same Committee. pp. 99. Washington, D. C., Feb. 23, 1849.

24. "Rapport du Comité du Sénat et de la Chambre des Représentants des Etats Unis d'Amérique, auquel on référa le Mémoire de William T. G. Morton, demandant une Compensation," &c. &c. pp. 35. Le 23 Février, 1849.

25. "The Casket and the Ribbon; or, the Honors of Ether." pp. 26. Baltimore, 1849. By William H. Dwinells, M. D.

The volumes of the "Boston Medical and Surgical Journal from August, 1846, to August, 1849, inclusive, contain communications on "Letheon." To these I add:

26. "An Address delivered before the Castleton Medical College, on the History of the Original Application of Anæsthetic Agents;" May 17, 1848. By E. R. Smilie, M. D.

27. "Painless Operations in Surgery." Littell's Living Age, Vol. xiii, No. 161, June 12, 1847.

28. "Etherization: a Compendium of its History, Surgical Use, Danger, and Discovery." By Henry J. Bigelow, M. D. Boston Medical and Surgical Journal, April 19, 1848, p. 229 and p. 254.

29. "Anaesthetic Agents: their Mode of Exhibition and Physiological Effects." By Henry J. Bigelow, M. D. Transactions of the American Medical Association, Vol. 1, 1848.

30. "Principles recognized by Scientific Men applied to the Ether Controversy." By Mr. Joseph Hale Abbot. Littell's Living Age, Vol. XVII. No. 214, June 17, 1848.

31. "Etherization; with Surgical Remarks." By J. C. Warren, M. D. Boston, 1848.

32. "On the Physiological Effects of Sulphuric Ether, and its Superiority to Chloroform." By William T. G. Morton, M. D. Boston, 1850.

33. "Interesting Statement of Facts relative to the Ether Discovery." By H. A. Hildreth, Boston. Boston Medical and Surgical Journal, Nov. 24, 1852.

34. "Discovery by the late Horace Wells of the Applicability of Nitrous-Oxide Gas, Sulphuric Ether, and other Vapors, in Surgical Operations, nearly two years before the Patented Discovery of Drs. Charles T. Jackson and W. T. G. Morton." By J. Wales. Hartford, Conn., 1852.

35. "On Anaesthetic Agents." By Charles T. Jackson, M. D. Southern Medical and Surgical Journal. January, 1853. Augusta, Ga.

36. "Trials of a Public Benefactor, as illustrated in the Discovery of Etherization." By Nathan P. Rice, M. D. New York, 1859.

37. "Dr. Wells, the Discoverer of Anaesthesia. Who conquered Pain?" New York, 1860. (Anonymous.)

38. "A Manual of Etherization; containing Directions for the Employment of Ether, Chloroform, and other Anaesthetic Agents, by Inhalation, in Surgical Operations, intended for Military and Naval Surgeons, and all who may be Exposed to Surgical Operations; with Instructions for the Preparation of Ether and Chloroform, and for testing them for Impurities. Containing also a brief History of the Discovery of Anaesthesia." By Charles T. Jackson, M. D. Boston, 1861. 12mo, pp. 134.

39. "An Inquiry into the Origin of Modern Anaesthesia." By the Hon. Truman Smith. Including a Life of Horace Wells, by P. W. Ellsworth, M. D. Hartford, 1867.

40. "Nitrous-Oxide Gas for Surgical Purposes in 1848." By Henry J. Bigelow, M. D. Boston Medical and Surgical Journal, Feb. 13, 1868, p. 17.

41. "Death by Chloroform, and Alleged Death by Ether." Boston Medical and Surgical Journal, October 24, 1872.

42. "Alleged Death from Ether. A Letter to the Editor of the British

Medical Journal." Boston Medical and Surgical Journal, November 20, 1873.

43. A Century of American Medicine,—1776-1876. "A History of the Discovery of Modern Anaesthesia." By Henry J. Bigelow, M. D. Philadelphia. Also in American Journal of the Medical Sciences, January, 1876.

44. "History of the Discovery of Anaesthesia." By J. Marion Sims, M. D., M. A., LL.D., 267 Madison Avenue, New York. From Virginia Medical Monthly, May, 1877. Richmond, 1877; New York, 1879.

45. "Anaesthetic Inhalation: Rival Claimants to the Discovery. Dr. Long's Claim criticised. The Priority of Dr. Morton's Claim maintained." By William J. Morton, M. D. New York Medical Times, Sept. 9, 1879.

46. "The Discoverer of Anaesthesia. The Claims made for Dr. Long criticised." By William J. Morton, M. D. New York Medical Record, Nov. 1, 1879.

47. "Escape from Pain: the History of a Discovery." By Sir James Paget. The Nineteenth Century, December, 1879.

48. "The Invention of Anaesthetic Inhalation; or, Discovery of Anaesthesia." By William J. Morton, M. D. Reprint, with additions and alterations, from Virginia Medical Monthly, March, 1880. New York, 1880.

49. "Statement of the History of his Discovery of the Means of preventing all Sensations of Pain in Surgical Operations, by Administration of Vapor of pure Sulphuric Ether, mixed with Air, by Pulmonary Inhalation." By Charles T. Jackson, M. D. (No date or source given.)

50. Report No. 114. Thirtieth Congress, Second Session. House of Representatives. William T. G. Morton. Sulphuric Ether. Feb. 23, 1849. Report of Dr. Edwards, from the Select Committee to whom the subject was referred. pp. 46.

51. Report No. 114. Thirtieth Congress, Second Session. House of Representatives. Minority Report. W. T. G. Morton. Feb. 28, 1849. pp. 99.

52. Thirty-second Congress, First Session. House of Representatives. William T. G. Morton, M. D. Sulphuric Ether. 1852. Referred to a Select Committee. Dr. William H. Bissell, of Illinois, chairman; majority report. pp. 128.

53. An Examination of the Question of Anaesthesia, arising on the Memorial of Charles Thomas Wells, presented to the United States Senate, Second Session, Thirty-Second Congress, and referred to a Select Committee, of which Hon. Isaac P. Walker is Chairman. Prepared for the information of said Committee by Hon. Truman Smith. pp. 103. (No date.)

54. Report to the House of Representatives of the United States of America, vindicating the Rights of Charles T. Jackson to the Discovery of the Anaesthetic Effects of Ether Vapor, and disproving the Claims of W. T. G. Morton to that Discovery. Presented to the House of Representa-

tives on Aug. 28, 1852, by Hon. Edward Stanly of North Carolina, and Hon. Alexander Evans of Maryland, members of the Select Committee on the Ether Question. Printed by authority of the Committee. pp. 57.

55. "Sulphuric Ether." Debate in the Senate, Saturday, Aug. 28, 1852. Supplement to the "Boston Medical and Surgical Journal," Oct. 6, 1852.

56. Statements, supported by Evidence, of William T. G. Morton, M. D., on his Claim to the Discovery of the Anaesthetic Properties of Ether, submitted to the Honorable the Select Committee appointed by the Senate of the United States. Thirty-Second Congress, Second Session, Jan. 21, 1853. Washington, 1853. pp. 582.

57. Appendix to the above; containing Testimony in relation to the Claims of Dr. Horace Wells, with Evidence explanatory thereto. pp. 135.

58. Thirty-second Congress, Second Session. In Senate of the United States, Feb. 19, 1853. Report of Committee, No. 421. Report of Mr. Walker; containing Views of the Chairman on "An Examination of the Question of Anaesthesia," prepared by the Hon. Truman Smith, a member of the Committee, and printed and circulated among the Members of the Senate and House of Representatives. pp. 33.

59. The Respectful Notice, Protest, and Memorial of W. T. G. Morton, M. D., Discoverer and Patentee of Etherization. Addressed to His Excellency the President, the Honorable Secretaries of the Treasury, War, Navy, and Interior, touching the use of his Discovery in the Public Service, in violation of his vested rights under the Letters Patent of the United States. Washington, 1854. pp. 49.

60. Thirty-seventh Congress, second Session, Report of Committee, No. 89. In the Senate of the United States, Feb. 14, 1863. Mr. H. Wilson. Report of the Committee on Military Affairs and the Militia, to whom was referred the Petition of William T. G. Morton asking Compensation for the Discovery and Gift to his Country and Mankind of the application of Etherial Vapor as a safe and practical Anaesthesia, or pain-subduing Agent. pp. 166.

61. "Ether." Chapter XIV in "A Narrative of Medicine in America," 1903, by J. G. Mumford, M. D.

THE WEBSTER MURDER TRIAL,

1849.

CHAPTER XXV.

THE WEBSTER MURDER TRIAL.

1849.

The Corporation records of December 29th, 1849, contain the statement that "Professor Horsford is appointed Lecturer on Chemistry at the Medical School in the absence of the Erving Professor during the present term." The same records say, July 10, 1850, that "Professor Webster resigns." Behind these commonplace announcements stands a remarkable story of crime. The principals in the tragedy as well as the events concerned are so intimately connected with the Harvard Medical School that they warrant some discussion.*

George Parkman, a well known physician of Boston, and donor of the land upon which the North Grove Street Medical School building was erected, disappeared on Friday, the twenty-third day of November, 1849. He was last seen alive at 1-45 P. M., entering the School. Notices of his disappearance and offers of reward for information leading to his discovery were sent broadcast on Saturday and Sunday. On Sunday, John W. Webster, Erving Professor of Chemistry, reported to the family of Parkman that on the Friday previous (the day of the disappearance) Parkman had visited him at the Medical School at half-past one o'clock. Professor Webster lectured four times a week to the medical class, in addition to his duties as Erving Professor at Cambridge. It will be recalled that each of the seven professors then connected with the School received the money from the sale of

* Taken from "Report of the Webster Case," by George Bemis, Esq.

tickets for his course of lectures. Webster's course of Lectures began November 7th.

Now it appears that Webster owed money to several persons, including Parkman; Parkman was greatly irritated by the failure of Webster to keep his promises to pay, and concluded that the opening month of the School term, when the students were paying for their tickets, would be an opportune time to collect the debt. The meeting at Webster's laboratory was in response to a message sent to Parkman to call at the School at the conclusion of his (Webster's) lecture, Friday, November 23rd.

A diligent and extensive search failed to find any trace of Parkman until Friday, November 30th, when a pelvis, a right thigh, and left leg, together with a towel marked "W" were found in a vault of the privy connected with Webster's private laboratory at the Medical School. Further search of the School revealed a thorax and a left thigh packed in a tea-chest filled with tan and covered with minerals, in a corner of the same laboratory. In the furnace of the laboratory was a large mass of human bones fused in slag and cinders. Here, too, were found the block of mineral teeth and the gold filling which proved the connecting link in identifying the remains as those of Parkman.

Webster had in the meantime (Friday night, the 30th) been arrested at his house in Cambridge, and brought over to the Medical School, where the disarticulated portions of the body of Parkman had been arranged to await his inspection. It is not necessary to follow the testimony or the scenes connected with the trial of twelve days which ended April 1, 1850. This was a period of grievous mortification and distress for all Harvard men. Before the ordeal ended, the President of Harvard College, the Professors of the Medical School, the Chief Justice, the Associate Justices, the Counsel for the Commonwealth, and Counsel for the Prisoner all bore

their unhappy but honorable share. Nor did the unfortunate prisoner himself long resist the final evidence, as may be seen from the following confession of his crime:

"Professor Webster's Confessional Statement, as reported to the Council by Rev. Dr. Putnam.

"On Tuesday, the 20th of November, I sent the note to Dr. Parkman, which, it appears, was carried by the boy Maxwell. I handed it to Littlefield unsealed It was to ask Dr. Parkman to call at my rooms on Friday the 23rd, after my lecture. He had become of late very importunate for his pay. He had threatened me with a suit, to put an officer into my house, and to drive me from my professorship, if I did not pay him. The purport of my note was simply to ask the conference. I did not tell him in it what I could do, or what I had to say about my payment. I wished to gain, for those few days, a release from his solicitations, to which I was liable every day on occasions and in a manner very disagreeable and alarming to me, and also to avert, for so long a time at least, the fulfilment of recent threats of severe measures. I did not expect to be able to pay him when Friday should arrive. My purpose was, if he should accede to the proposed interview, to state to him my embarrassments and utter inability to pay him at present, to apologize for those things in my conduct which had offended him, to throw myself upon his mercy, to beg for further time and indulgence for the sake of my family, if not for my own, and to make as good promises to him as I could have any hope of keeping.

"I did not hear from him on that day, nor the next (Wednesday); but I found that on Thursday he had been abroad in pursuit of me, though without finding me. I feared that he had forgotten the appointment, or else did not mean to wait for it. I feared he would come in upon me at my lecture hour, or while I was preparing my experiments for it. Therefore I called at his house on that morning (Friday), between eight and nine, to remind him of my wish to see him at the College at half-past one, —my lecture closing at one. I did not stop to talk with him then, for I expected the conversation would be a long one, and I had my lecture to prepare for. It was necessary for me to save my time, and also to keep my mind free from other exciting matters. Dr. Parkman agreed to call on me, as I proposed.

"He came, accordingly, between half-past one and two. He came in at the lecture-room door. I was engaged in removing some glasses from my lecture-room table into the room in the rear, called the upper laboratory. He came rapidly down the steps and followed me into the laboratory. He immediately addressed me with great energy: 'Are you ready for me, sir? Have you got the money?' I replied, 'No, Dr. Parkman'; and was then beginning to state my condition, and make my appeal to him.

He would not listen to me, but interrupted me with much vehemence. He called me 'scoundrel' and 'liar,' and went on heaping upon me the most bitter taunts and opprobrious epithets. While he was talking he drew a handful of papers from his pocket, and took from among them my two notes, and also an old letter from Dr. Hosack, written many years ago, and congratulating him (Dr. P.) on his success in getting me appointed professor of chemistry. 'You see,' he said, 'I got you into your office, and now I will get you out of it.' He put back into his pocket all the papers, except the letter and the notes. I cannot tell how long the torrent of threats and invectives continued, and I can now recall to memory but a small portion of what he said. At first I kept interposing, trying to pacify him, so that I might obtain the object for which I had sought the interview. But I could not stop him, and soon my temper was up. I forgot every thing. I felt nothing but the sting of his words. I was excited to the highest degree of passion; and while he was speaking and gesticulating in the most violent and menacing manner, thrusting the letter and his fist into my face, in my fury I seized whatever thing was handiest, —it was a stick of wood,—and dealt him an instantaneous blow with all the force that passion could give it. I did not know, nor think, nor care, where I should hit him, nor how hard, nor what the effect would be. It was on the side of his head, and there was nothing to break the force of the blow. He fell instantly upon the pavement. There was no second blow. He did not move. I stooped down over him, and he seemed to be lifeless. Blood flowed from his mouth, and I got a sponge and wiped it away. I got some ammonia and applied it to his nose; but without effect. Perhaps I spent ten minutes in attempts to resuscitate him; but I found that he was absolutely dead. In my horror and consternation I ran instinctively to the doors and bolted them,—the doors of the lecture room, and of the laboratory below. And then, what was I to do?

"It never occurred to me to go out and declare what had been done, and obtain assistance. I saw nothing but the alternative of a successful removal and concealment of the body, on the one hand, and of infamy and destruction on the other. The first thing I did, as soon as I could do anything, was to drag the body into the private room adjoining. There I took off the clothes, and began putting them into the fire which was burning in the upper laboratory. They were all consumed there that afternoon,—with papers, pocket-book, or whatever else they may have contained. I did not examine the pockets, nor remove anything except the watch; I saw that, or the chain of it, hanging out; and I took it and threw it over the bridge as I went to Cambridge.

"The next move was to get the body into the sink which stands in the small private room. By setting the body partially erect against the corner, and getting up into the sink myself, I succeeded in drawing it up. There it was entirely dismembered. It was quickly done, as a work of terrible

and desperate necessity. The only instrument used was the knife found by the officers in the tea-chest, and which I kept for cutting corks. I made no use of the Turkish knife, as it was called at the trial. That had long been kept on my parlor mantel-piece in Cambridge, as a curious ornament. My daughters frequently cleaned it; hence the marks of oil and whiting on it. I had lately brought it into Boston to get the silver sheath repaired.

"While dismembering the body, a stream of Cochituate was running through the sink, carrying off the blood in a pipe that passed down through the lower laboratory. There must have been a leak in the pipe, for the ceiling below was stained immediately round it.

"There was a fire burning in the furnace of the lower laboratory. Littlefield was mistaken in thinking there had never been a fire there. He had probably never kindled one, but I had done it myself several times. I had done it that day for the purpose of making oxygen gas. The head and viscera were put into that furnace that day, and the fuel heaped on. I did not examine at night to see to what degree they were consumed. Some of the extremities, I believe, were put there that day.

"The pelvis and some of the limbs, perhaps all, were put under the lid of the lecture-room table in what is called the *well*,—a deep sink lined with lead. A stream of Cochituate was turned into it, and kept running through it all Friday night. The thorax was put into a similar well in the lower laboratory, which I filled with water, and threw in a quantity of potash which I found there. This disposition of the remains was not changed till after the visit of the officers on Monday.

"When the body had been thus all disposed of, I cleared away all traces of what had been done. I took up the stick with which the fatal blow had been struck. It proved to be the stump of a large grape vine, say two inches in diameter, and two feet long. It was one of two or more pieces which I had carried in from Cambridge long before, for the purpose of showing the effect of certain chemical fluids in coloring wood, by being absorbed into the pores. The grape vine, being a very porous wood, was well suited to this purpose. Another longer stick had been used as intended, and exhibited to the students. This one had not been used. I put it into the fire.

"I took up the two notes, either from the table or the floor,—I think the table,—close by where Dr. P. had fallen. I seized an old metallic pen lying on the table, dashed it across the face and through the signatures, and put them in my pocket. I do not know why I did this rather than put them into the fire; for I had not considered for a moment what effect either mode of disposing of them would have on the mortgage, or my indebtedness to Dr. P. and the other persons interested; and I had not yet given a single thought to the question as to what account I should give of the objects or results of my interview with Dr. Parkman.

"I never saw the sledge-hammer spoken of by Littlefield, and never knew of its existance; at least, I have no recollection of it.

"I left the College to go home, as late as six o'clock. I collected myself as well as I could, that I might meet my family and others with composure. On Saturday I visited my rooms at the College, but made no change in the disposition of the remains, and laid no plans as to my future course.

"On Saturday evening I read the notice in the Transcript respecting the disappearance. I was then deeply impressed with the necessity of immediately taking some ground as to the character of my interview with Dr. P., for I saw that it must become known that I had such an interview, as I had appointed it, first, by an unsealed note on Tuesday, and on Friday had myself called at his house in open day and ratified the arrangement, and had there been seen and probably overheard by the man-servant; and I knew not by how many persons Dr. P. might have been seen entering my rooms, or how many persons he might have told by the way where he was going. The interview would in all probability be known, and I must be ready to explain it. The question exercised me much; but on Sunday my course was taken. I would go into Boston, and be the first to declare myself the person, as yet unknown, with whom Dr. P. had made the appointment. I would take the ground that I had invited him to the College to pay him money, and that I *had* paid him accordingly. I fixed upon the sum by taking the small note and adding interest, which, it appears, I cast erroneously.

"If I had thought of this course earlier, I should have deposited Pettee's check for $90 in the Charles River Bank on Saturday, but should have suppressed it as going so far towards making up the sum which I was to profess to have paid the day before, and which Pettee knew I had by me at the hour of the interview. It had not occurred to me that I should ever show the notes cancelled in proof of the payment; if it had, I should have destroyed the large note, and let it be inferred that it was gone with the missing man; and I should only have kept the small one, which was all that I could pretend to have paid. My single thought was concealment and safety. Everything else was incidental to that. I was in no state to consider my ulterior pecuniary interests. Money, though I needed it so much, was of no account with me in that condition of mind.

"If I had designed and premeditated the homicide of Dr. P. in order to get possession of the notes and cancel my debt, I not only should not have deposited Pettee's check the next day, but I should have made some show of getting and having the money the morning before. I should have drawn my money from the bank, and taken occasion to mention to the cashier, that I had a sum to take out that day for Dr. P., and the same to Henchman, when I borrowed the $10. I should have remarked, that I

was so much short of a large sum that I was to pay to Parkman. I borrowed the money of Henchman as mere pocket-money for the day.

"If I had intended the homicide of Dr. P., I should not have made the appointment with him twice, and each time in so open a manner that other persons would almost certainly know it. And I should not have invited him to my room at an hour when the College would have been full of students and others, and an hour when I was most likely to receive calls from others; for that was an hour—just after the lecture—at which persons having business with me, or in my rooms were always directed to call.

"I looked into my rooms Sunday afternoon, but did nothing.

"After the first visit of the officers, I took the pelvis and some of the limbs from the upper well, and threw them into the vault under the privy. I took the thorax from the well below, and packed it in the tea-chest, as found. My own impression has been that this was not done till after the second visit of the officers, which was on Tuesday; but Kingsley's testimony shows that it must have been done sooner. The perforation of the thorax had been made by the knife at the time of removing the viscera.

"On Wednesday, I put on kindlings and made a fire in the furnace below, having first poked down the ashes. Some of the limbs—I cannot remember what ones or how many—were consumed at that time. This was the last I had to do with the remains.

"The tin box was designed to receive the thorax, though I had not concluded where I should finally put the box. The fish-hooks, tied up as grapples, were to be used for drawing up the parts in the vault, whenever I should determine how to dispose of them. And yet, strange enough, I had a confused double object in ordering the box and making the grapples. I had before intended to get such things to send to Fayal;—the box to hold plants and other articles which I wished to protect from salt water and the sea air,—and the hooks to be used there in obtaining coraline plants from the sea. It was this previously intended use of them that suggested and mixed itself up with the idea of the other application. I doubt, even now, to which use they would have applied. I had not used the hooks at the time of the discovery.

"The tan put into the tea-chest was taken from a barrel of it that had been in the laboratory some time. The bag of tan brought in on Monday was not used, nor intended to be used. It belonged to a quantity obtained by me a long time ago for experiments in tanning, and was sent in by the family to get it out of the way. Its being sent just at that time was accidental.

"I was not aware that I had put the knife into the tea-chest.

"The stick found in the saucer of ink was for making coarse diagrams on cloth.

"The bunch of 'filed' keys had been long ago picked up by me in Fruit street, and thrown carelessly into a drawer. I never examined them, and

do not know whether they would fit any of the locks of the College or not. If there were other keys fitting doors with which I had nothing to do, I suppose they must have been duplicates, or keys of former locks, left there by the mechanic or janitor. I know nothing about them, and should never be likely to notice them amongst the multitude of articles, large and small, and of all kinds, collected in my rooms. The janitor had furnished me a key to the dissecting room for the admission of medical friends visiting the College; but I had never used it.

"The nitric acid on the stairs was not used to remove spots of blood, but dropped by accident.

"When the officers called for me Friday, 30th, I was in doubt whether I was under arrest, or whether a more strict search of my rooms was to be had; the latter hypothesis being hardly less appalling than the former. When I found that we went over Craigie's bridge, I thought the arrest most probable. When I found that the carriage was stopping at the jail, I was sure of my fate; and before leaving the carriage, I took a dose of strychnine from my pocket and swallowed it. I had prepared it in the shape of a pill before I left my laboratory on the 23rd. I thought I could not bear to survive detection. I thought it was a large dose. The state of my nervous system probably defeated its action, partially. The effects of the poison were terrible beyond description. It was in operation at the College, and before I went there; but more severely afterwards.

"I wrote but one of the anonymous letters produced at the trial,—the one mailed at East Cambridge.

"The 'little bundle,' referred to in the letter detained by the jailor, contained only a bottle of citric acid, for domestic use. I had seen it stated in a newspaper that I had purchased a quantity of *oxalic* acid, which it was presumed was to be used in removing blood-stains. I wished the parcel to be kept untouched, that it might be shown, if there should be occasion, what it really was that I had purchased.

"I have drawn up in separate papers an explanation of the use I intended to make of the blood sent for on Thursday, the 22d, and of the conversation with Littlefield about the dissecting vault.

"I think that Pettee, in his testimony at the trial, put too strongly my words about *having settled* with Dr. Parkman. Whatever I did say, of the kind, was predicated on the hope I entertained that I should be able to pacify Dr. Parkman and make some arrangement with him; and was said in order to quiet Pettee, who was becoming restive under the solicitation of Dr. Parkman."

This confession was sent with several petitions for a pardon, or, at least, a commutation of the sentence, and was submitted to the Governor's Council. That body spent much

time on the subject, and finally reported that "the palliating facts and circumstances set forth in the confession have not been so confirmed by other evidence and circumstances as to form a proper and sufficient basis for Executive interference." Webster was hanged on August 30th, 1850.

The interest in the trial may be judged by the fact that more than 60,000 persons attended it. The Medical School was opened for public inspection of the scene of the murder, and more than 5,000 persons visited it during one day.

BODY SNATCHING AND ANATOMY LAWS.

CHAPTER XXVI.

BODY SNATCHING AND ANATOMY LAWS.

There is no more self-evident truth than that the basis of all medical knowledge is *anatomy*. No rational medicine, no safe surgery, can possibly exist without that knowledge; and the obvious corollary is that a knowledge of anatomy can be acquired only by dissection. That is the subject of this chapter.*

The former prejudice, superstition, opposition, and open violence against a pursuit of this study are little appreciated to-day. Yet such antagonism is an affair of comparatively recent date. Body-snatching and the rise of modern anatomy went together. No recent age, country, or school has been altogether free from this difficulty,—though a broader popular intelligence has brought its remedies. Even to-day we find the political demagogue appealing to popular prejudice with arguments mediaeval and unjust. No medical school has escaped the evils, and Harvard has suffered with the rest. Let us then review the question through its various stages.

In modern times it is possible to trace dissection back to the fourteenth century. As early as 1319 a teacher and his pupils were tried in Bologna for body-snatching. In 1405 the University of Bologna decreed that "no doctor or student or anyone else shall appropriate a corpse without the permission of the Rector." With Vesalius (1514-1564) modern anatomy took on new life, and so one is not surprised to learn of the people of

* An admirable presentation of the Anatomy laws and Body-snatching is given by Thomas Dwight, M. D., Parkman Professor of Anatomy at Harvard University, "Forum," December, 1896.

Padua demanding in 1550 that the laws against the practice of body-snatching be more strictly enforced. Vesalius's fame as an anatomist makes it evident enough that he was favored with necessary although unlawful "material." The rise of the French school in the sixteenth century shows that Paris was a good centre for "material." In fact, Moliere suggests that public dissections became as fashionable in France as are bull fights in Spain. Whether the custom ever gained much of a foot-hold in Germany is not clear, yet it is a fact that Rolfink was directed by his sovereign to perform a dissection for the entertainment of distinguished guests at court. Body-snatching became known as "Rolfinked."

In Great Britain the bodies of a limited number of criminals were assigned by law for dissection, but it is needless to say that the demand far exceeded the lawful supply, and that the deficiency was made good *invito domino*. It is worthy of recording that in England the apprenticeship contracts of the early eighteenth century period held a clause against students robbing graves. An enraged mob tried to emphasize this clause in 1725 by threatening to destroy the buildings of the College of Surgeons. The later English story of this traffic is perhaps as black as any in the annals of crime.*

In America the reported dissection by Giles Firmin stands alone in the Colonial period, and so far as I know there were no anatomy laws enacted prior to the adoption of the Federal Constitution. The provincial courts made provision to give the bodies of criminals executed by law to certain physicians. Before the Revolution there was a class of students under Joseph and John Warren who were able to study dissection by means of subjects obtained from among the soldiers who died without claim by their relations. This was the Anatomical Society of students, formed some time prior to 1771,

* See Bransby Cooper's "Life of Sir Astley Cooper" for a full description of these horrors.

probably the first society organized by medical students in this country. The Revolution offered further opportunities for pursuing the study, and in 1781 John Warren began the lectures which attracted the attention of the Harvard President and Fellows. The scarcity of bodies and the boldness of the resurrectionists in England about the time that our Revolution came to an end, resulted in many incidents of imitation in this country, especially among medical students. One of these students of the Bob Sawyer type was the cause of that famous "Doctors' Mob" in New York in 1788.

The only legislative result in New York was an act passed in the succeeding year which provided severe punishment for the violation of graves, and gave the court discretion as to the disposal of the bodies of those executed for murder, arson, and burglary. This same provision was the rule in Massachusetts at the close of the war. The number of bodies thus obtained was scarcely ever more than two a year. Consequently those who gave lectures on anatomy and surgery procured their "subjects" in the same dangerous way as did their confrères of New York and Philadelphia.

John C. Warren, in his "Biographical Notes" says*, "while in College, I began the business of getting subjects in 1796," and he relates the circumstances of a midnight visit to the North Burying ground. "When my father came up in the morning to lecture, and found I had been engaged in this scrape, he was very much alarmed; but when the body was uncovered, and he saw what a fine healthy subject it was, he seemed to be as much pleased as I ever saw him. This body lasted the course through." J. C. Warren further says that he was able to procure a large supply of bodies through the medical students, for the dissecting rooms opened in 1806 at 49 Marlborough Street.

* "Life of John C. Warren," vol. I, pp. 404-420.

The increase in the number of medical schools in New England; the private dissecting rooms opened in Boston; the bitter public discussions over the petition to establish another medical school in Boston; the application of the Corporation of Harvard for a legislative grant to build a new building for the Medical School,—all this gradually convinced the popular mind that *something* should be done to prevent the robbing of graves. The result was the passage of a legislative Act,* February 13, 1812, making it obligatory, under penalty of fine or imprisonment, upon sheriffs of jails, either to deliver a dead body to relatives or friends of the deceased, or to see that it was properly buried. This law was soon followed by another entitled,

"An Act to protect the Sepulchres of the Dead."

"Chap. 175."

"Sect. 1. BE *it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same,* That if any person, not being authorized by the board of health, or the selectmen of any town in this Commonwealth, shall knowingly and wilfully dig up, remove or carry away or aid or assist in digging up, removing or carrying away any human body, or the remains thereof, such person or persons, so offending, shall, on conviction of such offence, in the Supreme Judicial Court of this Commonwealth, be imprisoned, not more than one year, or fined, not more than one thousand dollars, according to the nature and aggravation of the offence.

"Sect. 2. *Be it further enacted,* That if any person or persons knowingly and wilfully receive, conceal, or dispose of any human body, or the remains thereof, which shall have been dug up, removed, or carried away in the manner described in the first section of this Act, he or they shall be subject to the same forfeitures and penalties, as in said section is provided, on conviction thereof in the court aforesaid: *Provided however,* That nothing in this Act shall be so construed as to affect the power or authority in the courts of the United States, or this Commonwealth, or of any person acting under the authority of the same, in removing or disposing of the bodies of persons executed pursuant to any sentence of such Court.

"Sect. 3. *Be it further enacted,* That all fines, accruing under this Act,

* Acts of 1811, Chapter 102, General Laws of Massachusetts.

shall enure, one half to the informer, and one half to the town in which the offence is committed. (March 2, 1815.)"

This was the first law upon the subject; previously, the matter had been left to the common law. It may be interesting to learn how the common law managed. You may remember that the Legislature gave to the Massachusetts Medical Society the power to require, and it was made their duty to require, of all persons entering on the practice of medicine, an adequate knowledge of anatomy. Now, however, the General Court raised up a legal barrier to dissection. How then was an adequate knowledge of anatomy to be acquired? Assuming that no intelligent community believed the study of anatomy would be pursued without dissection, the law just enacted compelled the surgeon to seek instruction elsewhere, or unlawfully to obtain bodies at home. New England medical students did both, and the Harvard Medical School procured bodies at home and abroad. The truth is frankly told by John C. Warren thus: "We were obliged to resort to the most dangerous expedients, and finally to the city of New York, at a great expense of money, and great hazard of being discovered. Two or three times, our agents were actually seized by the police, and recognized to appear in court. One or two were brought in guilty, and punished by fine; but the law officers being more liberal in their views than the city officers, made the penalty as small as possible. Constant efforts were necessary to carry on this business and every species of danger was involved in its prosecution."

Warren tells of the hazards of procuring bodies from the grave-yards in and about Boston: "Sometimes popular excitement was got up, and the Medical College threatened. I had reason, at some periods, even to apprehend attacks on my dwelling-house. Whenever the lectures approached, a state of increased anxiety came with them. At length the pressure was so great that it was resolved to make an effort on the

Legislature, though with very little hope of success. In the meantime, we furnished our students with subjects at the same rate as at present, obtaining them from New York at twenty-five dollars, and distributing them among the students at five."

The two following communications explain different solutions of the difficulties caused by the Act of 1815:

"Dear Sir: I have not replied to your note earlier because I could not ascertain until this morning whether a subject could be procured at this time. I am sorry to inform you that there is not an immediate prospect of one, but when there is, will send you word. The place where I generally obtain them is the Charlestown Hospital—where through the kindness of Dr. T.—it is wholly unattended with the unpleasant circumstances & risks usually connected with such business. If the obstacle recently thrown in the way by our Police officers, should, as has been surmised, interfere with your operations, and it is in our power to aid you, it will give us pleasure. "Yrs. very truly,

"Edwad. Reynolds."

"United States of America, Massachusetts District. At the Circuit Court of the United States for the First Circuit begun and holden at Boston within and for the Massachusetts District on Thursday the fifteenth day of October 1818 and sitting by adjournment on Tuesday the fifth day of January A. D. 1819.—

"Before the Honorable Joseph Storer, Associate Judge; John Davis, District Judge;

"Upon the applications of Drs. John C. Warren, and Nathaniel Niles, It was ordered by the Court, that the Bodies of John Williams, John P. Rog, Francis Frederick and Nilo Peterson, who by the sentence of this Court are ordered to be hanged by the neck till dead on Thursday the twenty first day of January current, after the execution of said sentence be delivered by the marchal, to said John C. Warren, for the purpose of dissection. But is recommended by the Court to said John C. Warren to accommodate said Nathaniel Niles, with one of said Bodies.

"Attes.—"

Whether the enactment of a law similar to that of Massachusetts in New York and Philadelphia, had the desired effect in abating the practice in those places can be judged from the following letter:

"Jan. 1829.

"My Dear Sir: The following is the mode of permitting bodies to be taken for dissection in New York.—*Two* pits are opened at the public ground. It is understood that the anatomists are *upon honour* not to disturb bodies placed in No. 1, but are at liberty to take *all* placed in No. 2 The officer superintending the public charity places a mark, agreed on between himself and the keeper of the ground, upon all boxes to be deposited in *No. 2.*. Those which he considers most entitled to respect, or most likely to be called for by friends, are deposited in No. 1. The person entrusted with the removal of the bodies, gives the keeper notice during the day of the hour and manner in which he is to come at night. In this way the keeper is prepared to examine the ground very early in the morning and remove any accidental marks which might lead visitors to suspect the occurrence of the previous evening. To lessen the chance of such accidents, it is a general rule to remove the boxes without opening them at the pit, and this is decidedly the best plan, as it does away with the necessity of hatchets and hammers, and can be effected noiselessly.

"The Philadelphia arrangement is vastly superior; The city appoints a superintendent to each of the public grounds at a very small salary. It is perfectly understood that his *business* is to give the anatomists every facility consistent with the most entire secrecy. He is allowed to profit thereby as much as maybe:—observing with strict justice to supply each applicant in his turn according to the nature of his claim, which is determined by the number in his class. These superintendents have their own servants and at certain hours of the night agreed upon between the city watch and themselves they are permitted to deliver the subjects to the anatomical establishments free from interruption. In case of misconduct or unfair dealing on the part of the superintendents, the anatomist makes complaint to the mayor of the city, who inquires into and regulates the matter. In Philada. *all* the subjects buried in the two public grounds from the 1st Nov. till the first of April, can be had for dissection if required.

"The Philadelphia method is decidedly the most advantagious to all parties. It is the interest of the keeper to manage every thing with the utmost caution, and therefore there is never the slightest danger from popular tumult, as nothing can ever be seen by papers, that would lend to suspicion, and few persons in the city have the slightest idea of the manner in which the schools are supplied or even that they are supplied. A very strict watch is kept over the grounds, by the persons employed by the keeper, but it is to prevent private adventurers from robbing *him*—not to prevent them from emptying the pits. I sincerely hope you will be successful in inducing your city authorities to view this matter aright; certainly the example of Philadelphia is strongly in point, as a popular disturbance or robbery of a private burial ground is unknown, notwithstand-

ing from 12 to 20 subjects are weekly consumed during the dissecting season. All these statements are of course *secrets*.

"Sincerely yours, JOHN D. GODMAN."

Now John C. Warren was free from personal prejudice. Witness this extract from his will:

"The final and principal object of writing this letter is this, which regards the disposition of my mortal remains after the spirit has quitted them.

"1. Let the body be injected with arsenic after death, *soon*.

* * * * * * * * * * *

"3. The body afterwards to be removed to the Medical College; examined or dissected according to circumstances. Any morbid parts to be carefully preserved; and particular attention is to be paid to the heart, spleen and prostate gland.

"4. The bones to be carefully preserved, whitened, articulated, and placed in the lecture room of the Medical College, near my bust; affording, as I hope, a lesson useful, at the same time, to morality and science.

"I earnestly request that you and my family will lay aside any natural feeling of opposition to this my last request; considering that it is for the interest of humanity and for mine and their honor." *

This business of body-snatching was almost as odious to physicians as it was to the people, to the enlightened as to the ignorant. However, thoughtful men outside of the profession were recognizing the importance of dissections, and that fact prompted members of the medical profession in Massachusetts to petition the Legislature in 1829 to legalize the study of anatomy by dissections. A contrast of the results of the evils of such a law as then existed in Massachusetts and the results to be derived from the legal recognition of the study of anatomy can be gained from England and France.

In England there were laws against exhumation,—laws intended to protect the sepulchres, but no laws either allowing the use of bodies for dissection or laws prohibiting the study of anatomy. The result was the development of a class of

---

* The skeleton of Warren hangs in the Warren Museum at the Harvard Medical School.

professional body-snatchers who carried on their trade with a boldness almost incredible. Every form of crime up to murder was perpetrated by this band of men. No grave in England was safe, no earthly honors too exalted to deter their approach. Growing bolder and more defiant the resurrection-man entered homes even before the funeral and stole the dead. Driven at length to the necessity of fulfilling his contract, he actually murdered his comrades that he might bargain for their bodies. All this ceased as a result of the passage of the Anatomy Act of 1832.

In France the Faculty of Medicine at Paris was authorized to take from the civil hospitals, from the prisons, and from the alms-houses the bodies necessary for teaching anatomy, a gratuity of eight-pence being given to the attendants for each body. When the national convention of schools of health was assembled, one of the statutes declared that the subjects necessary for the schools of anatomy should be taken from the hospitals (1825). In the same period the chief of the anatomical department of the Faculty of Paris would send a carriage every day to the different hospitals to bring back the necessary number of bodies. At times this number reached two thousand a year exclusive of those from L'Hôpital de la Pitié. Upon the opening of dissecting theatres at all the large hospitals the distribution of bodies became more restricted, each hospital supplying its own anatomical classes with material. After the bodies had been dissected it was the custom to wrap the remnants in cloths, and take them to the neighboring cemetery. The result of this system was that grave robbing was unknown; that the people made no opposition to the use of bodies for dissection, as they felt assured that the study was necessary and that it was pursued in a decent manner; and the arrangement produced a class of surgeons recognized as great teachers the world over.

In Massachusetts the situation was this: there had been

but two laws passed (1812 and 1815, both quoted above); one provided that paupers, criminals, etc., *must be buried;* while the other made it a *crime* to disturb graves. Bodies for dissection could not be obtained in any legal manner (except the very few bodies granted by the court). Consequently the Massachusetts Medical Society, as well as many individual surgeons in the State, endeavored to have a law enacted, legalizing the study of Anatomy. The following circular letter was sent to every physician in the State:

"SIR, "SALEM, SEPT. 1, 1829.

"The Massachusetts Medical Society having appointed us a Committee 'to consider if any change can be effected in the laws of this Commonwealth, in relation to human dissection,' we have the honor to solicit your influence and interest to co-operate with us in devising means to advance the welfare of the community, and of our common profession, so deeply involved in the prosecution of Anatomical Science.

"It must be obvious to you, Sir, that the difficulties and dangers, which now oppose the practical study of Anatomy in this Commonwealth, are such as operate almost to the complete discouragement of the student and practitioner in pursuing this study; and that these difficulties and this discouragement grow out of the popular prejudice, which regards dissection with horror, and blinds the community to a view of the importance of the knowledge which is sought for, and the facility with which this knowledge may be obtained, without any outrage upon the good order or the genuine good feelings of the public. It is to the removal of this popular prejudice, especially as it exists in the minds of the members of our Legislature, that we wish to direct the efforts of the influential members of the Medical Society; and the following are some of the statements upon which it is intended to rely, in presenting a petition to the Legislature for a modification of the existing laws:—

"1. Anatomical knowledge is absolutely necessary in all branches of our profession. No conscientious man will venture to perform surgical operations without this knowledge; and it is equally necessary, to enable the physician to distinguish the seat of the different internal diseases, and direct the application of remedies.

"2. This knowledge can only be acquired by dissection. For it is manifestly as absurd to expect to learn the intricate structure of the human frame by means of plates and models, as for a mechanic to acquire a practical acquaintance with the structure and movements of a watch without being allowed to inspect the interior of the mechanism and to take it in pieces.

"3. So far as the poor are concerned, it is for their especial benefit, that all physicians should be enabled to learn Anatomy thoroughly and practise it occasionally during life. Riches may procure medical or surgical skill, at whatever cost, and from any distance. And so long as the rich are willing to pay for this skill at its highest rate, a few individuals will be found, who will seek it abroad or at home, at immense expense, or personal sacrifice and risk. But the poor must be dependent for medical and surgical relief upon those who are nearest to them; and, generally, not upon those who have had the *most* opportunities of acquiring skill in the long-continued practice of their profession.

"4. In confirmation of the foregoing argument, the Committee would refer to the observation of any competent member of the profession to say, if there are not among the paupers, who are supported at the public charge, many whose diseases and lameness have passed from a curable to an incurable condition, for the lack of that surgical skill which could only have been derived from a knowledge of practical Anatomy. It is not meant to be asserted, that all fractures, dislocations, and surgical diseases can be cured, without *some* cases occurring, in which such lameness will unavoidably result, as will occasion inability to labor. But so numerous are these cases now known to be, and so great the amount of loss which the public sustains by the loss of their labor, and the expense of their support, that the interest which the community has in affording the means of lessening the number of these cases is direct and obvious.

"5. All lovers of good order and good morals must feel desirous to prevent amongst us the growth of a body of people, who make it their business to violate the sepulchres of the dead. Late experience in Europe has shown, that the bands of resurrectionists are among the most *hardened* and *desperate* villains in society; and that even *murder* has been resorted to by them. These desperate people are always encouraged by whatever tends to create obstacles to the *lawful prosecution* of Anatomy, and will always find *some* means of supplying bodies, while a high price is paid for them by those engaged in anatomical studies. The perfect safety of the sepulchres of the dead may be insured, and the feelings of the living preserved from the least outrage, by a proper selection from among the bodies of the dead.—If the bodies of persons, who are unclaimed by the friendship or relationship of a living individual, are devoted, under proper regulations, to anatomical purposes, there will be found in all our large towns an adequate supply of the bodies of those, whose death no one is left to regret, and to whose remains no one is willing to show respect.

"In fine, it is certain, that the public, as a body, have a greater degree of interest in this matter than even physicians; and it is to be hoped, they may be made to view this interest in its true light.

"We respectfully request of you, Sir, that you will give us your assistance in promoting the object for which the Committee was appointed; and

especially by laying the subject, with such arguments as we have used, and others which will occur to yourself, before the consideration of those members of the Massachusetts Legislature with whom you are acquainted.

"We also request you would forward to the Chairman of the Committee, any important views which may occur to you upon this subject, and of what appears to you, from your personal knowledge of the course of public opinion in your vicinity, the prospect of success in the anticipated application to the General Court.

"If you should have any thing to communicate, please to forward it previous to the 1st of October.

"We are your obedient servants,

"A. L. PEIRSON,
"WILLIAM INGALLS,
"JOHN C. WARREN,
"GEO. C. SHATTUCK,
"JOHN BROOKS,
"JOHN D. WELLS,
"JOHN WARE."

To have enacted such a law many preliminaries were necessary. It was essential that public opinion should be changed so as to see it was for the interest of the community that anatomical investigation should be pursued; then the laity must be brought to realize that pathology and methods of correct practice are as intimately associated with anatomy as is surgery. All this took time. Numerous articles advocating the new law appeared in the press, and J. C. Warren with others gave public lectures at the State House before the legislative committee. The committee on Judiciary, to whom the order was referred, said:

"The Committee are aware that the subject is as delicate and difficult as it is important, and they do not think it expedient to propose any alteration of the laws at the present time; because in a community like ours, it is necessary that laws should proceed from and be supported by public opinion. They are satisfied from the statements made to them by some of the most eminent persons of the medical profession, that great prejudices exist, and that it is very important that correct information should be spread abroad in the community. * * * There is no reason to suppose that great discoveries and improvements may not yet be made; but further improvement is hopeless under a rigid enforcement of the present statute."

The determined and persistent efforts of the medical profession resulted in the enactment of an Anatomical Law in 1830, the first of its kind.* It reads as follows:

"CHAPTER 57. 1830.

"An Act more effectually to protect the Sepulchers of the Dead, and to legalize the study of Anatomy in certain cases.

"Section 1. *Be it enacted by the Senate and House of Representatives in General Court Assembled, and by the authority of the same,* That, if any person, not being authorized by the Board of Health, overseers of the poor, or selectmen in any town in this Commonwealth, or by the directors of the House of Industry, overseers of the poor, or mayor and aldermen of the City of Boston in said Commonwealth shall knowingly or wilfully dig up, remove, or convey away, or aid and assist in digging up, removing, or conveying away, any human body, or the remains thereof, such person or persons so offending, on conviction of such offense, in the Supreme Judicial Court of this Commonwealth shall be adjudged guilty of felony, and shall be punished by solitary imprisonment for a term not exceeding ten days, and by confinement afterwards to hard labour for a term not exceeding one year, or shall be punished by a fine not exceeding two thousand dollars, to enure to the benefit of the Commonwealth and by imprisonment in the common jail for a term not exceeding two years, at the discretion of the court, according to the nature and aggravation of the offence.

"Section 2. *Be it further enacted,* That if any person shall be in any way, either before or after the fact, accessory to the commission, by any person or persons, of the offense described in the first section of this act, such person or persons shall be adjudged and taken to be principals, and shall be, on the conviction in the court aforesaid, subject to the same punishment and forfeitures as are in said first section provided.

"Section 3. *Be it further enacted,* That from and after the passage of this act, it shall be lawful for the board of health, overseers of the poor, and selectmen of any town in the Commonwealth, and for the directors of the House of Industry, overseers of the poor, and mayor and aldermen of the city of Boston, in said Commonwealth to surrender the dead bodies of such persons, except town paupers, as may be required to be buried at the public expense, to any regular physician duly licensed according to the laws of this Commonwealth, to be by said physician used for the advancement of anatomical science, preference being always given to the medical schools that are now, or hereafter may be by law established in this Commonwealth, during such portions of the year as

* Great Britain did not enact an Anatomy Law until 1832, following the celebrated Burke and Hare murders at Edinburgh.

such schools, or either of them, may require subjects for the instruction of medical students; *provided,* that no such dead body shall in any case be so surrendered, if within thirty-six hours from the time of its death, any one or more persons claiming to be kin, friend, or an acquaintance to the deceased, shall require to have said dead body inhumed; or if it be made to appear to the selectmen or overseers of the poor of any town in this Commonwealth, or to the mayor and aldermen or overseers of the poor of the city of Boston, that such dead body is the remains of a stranger or traveller, who suddenly died before making known who or whence he was, but said dead body shall be inhumed, and when so inhumed, any person disinterring the same for purposes of dissection, or being accessories, as described in the second section of this act, to such exhumation, shall be liable to the punishments and forfeitures in this act respective provided; *and provided further,* that every physician so receiving such dead body, before it be lawful to deliver him the same, shall, in such case, give to the mayor and aldermen of the city of Boston, or the selectmen of any town of this Commonwealth, as each case may require, good and sufficient bond or bonds, that each body by him so received shall be used only for the promotion of anatomical science, that it shall be used for such purposes only in this Commonwealth, and so as in no event to outrage public feeling, and that, after having been so used, the remains thereof shall be decently inhumed.

"Section 4. *Be it further enacted,* That, from and after the passage of this act, it shall be lawful for any physician, duly licensed according to the law of this Commonwealth, or any medical student, under the authority of any such physician, to have in his possession, to use and employ, human dead bodies, or the parts thereof, for purposes of anatomical inquiry or instruction.

"Section 5. *Be it further enacted,* That nothing in this act shall be so construed or to give to the board of health, overseers of the poor, selectmen, of any town in this Commonwealth, or to the directors of the House of Industry, overseers of the poor, or mayor and aldermen of the city of Boston, in said Commonwealth, any power to license the digging up of any human body, or the remains thereof, other than now possessed by them before the passing of this act, or is given them by the third section of this act.

"Section 6. *Be it further enacted,* That the act passed March 2nd, 1815, entitled, 'An Act to protect the Sepulchers of the Dead,' and also all other acts or parts of acts, contravening the provisions of this act, be, and the same hereby are repealed. (Feb. 28, 1831.) Former laws repealed, 1814, ch. 175."

So a beginning was made to the placing of anatomical science on the same ground with other useful sciences, and the

influence for the good of the profession was soon manifest in other states and other countries. It was to be expected, however, that in a community still unprepared, such a law would be found to have defects. These defects we find, but it is more important to note the disposition upon the part of officials to evade or defeat the intent of the law and its execution. Trouble arose in this way. The law required the concurrent action of three boards, (1) the Mayor and Aldermen, (2) the Directors of the House of Industry, and (3) the Overseers of the Poor. To overcome the impracticability of this arrangement it was agreed that the Mayor and Aldermen should act as executive officers of the Act. With these officials constantly changing, the execution of the law gradually became very lax. Bodies when obtained through an insistence upon the execution of the law, were frequently found to have undergone previous mutilations. Another defect was the provision that *any* person who pleased to call himself a *friend* of the deceased was enabled to prevent the execution of the law. Moreover, there was the provision that the execution of the law was optional with the officials to whom it was entrusted. It took a great number of years to change that word "may" to "shall," but eventually it was accomplished as presently we shall see.

In this country the various changes in the laws relating to the supply of bodies for anatomical study make a long story. It is not necessary to follow them in detail. Local conditions did much in establishing the custom pursued by the several medical schools throughout the country. To assert that grave robbing is unknown to-day in this country would probably be a falsehood. A good advance however has been made. Such contrasting conditions as those of Kansas, the District of Columbia, and Maine* with those of Pennsylvania, New York

* The Professor of Anatomy at Bowdoin writes (1897): "Here our supply from other States is insufficient and precarious; and we get so

and Massachusetts, indicate the need of uniform legislation before the grave robber goes the way of Macheath and his like. For such uniform laws the medical profession must work.

Dissection has never been thought a crime; why should medical schools have taught it as though it were a crime? Dissection is practiced in the interest of humanity. The benefit is for all sorts and conditions of men. Here is a case in point, which I find on going through the mass of testimony (?) in that sensational attempt made a few years ago to arouse the popular mind against dissection, and particularly against the Harvard Medical School. The new building on Boylston Street was to be inspected. Many of the Faculty held the view suggested above, and thought to prevent an inspection of the dissecting room. The speaker of the occasion was the anatomist, Oliver Wendell Holmes. With a frankness and honesty which disarmed opposition he said: "among the various apartments destined to special uses, one will be sure to rivet your attention; namely, the anatomical laboratory, known in plainer speech as the dissecting-room." At that meeting Holmes set a new estimate on the study of anatomy, one which Harvard has since maintained.

The President wrote to the Medical Faculty (1883) that the College would not pay for any subjects for dissection not procured according to law. The Legislature revised its statutes soon after, and an Anatomical Law was passed which formed the basis of that under which we are now practicing dissection. The law runs as follows:

"CHAPTER 77."

"REVISED LAWS OF MASSACHUSETTS, 1902.

"Sect. 1. Upon the written application of the dean or other officer of any medical school established by law in the commonwealth, the over-

---

few subjects from domestic sources that the law must soon be made serviceable to science, or practical anatomy must cease in Maine." Professor Dwight, "Forum," December, 1897, page 501.

seer of the poor of a city or town, the trustees for children, the pauper institution trustees, the insane hospital trustees, and the penal institution commissioner of the City of Boston, the trustees and superintendent of the state hospital, state farm, or other public institution supported in whole or in part at the public expense, except the Soldiers' home in Chelsea, shall give such dean or other officer permission to take within three days after death, the bodies of such persons who die in such town, city, city institution, state hospital, state farm or public institution as are required to be buried at public expense, to be used within the commonwealth for the advancement of anatomical science; but such permission shall not be given to take the body of any soldier or sailor, known to be such, who served in the war of the rebellion or in the war between the United States and Spain. In giving such permission, regard shall be had to preserving as far as practicable a fair proportion between the number of students in attendance at such institutions and the number of bodies delivered to them respectively.

"Sect. 2. Such dean or other officer before receiving any such dead body shall give to the board or officer surrendering the same to him a sufficient bond with condition that such body shall be used only for the promotion of anatomical science within the commonwealth, and in such manner as in no event to outrage the public feeling, that, after having been so used, the remains shall be decently buried, that it shall not be so used for fourteen days after death, and that it shall, during said fourteen days, be kept in a condition and place to be viewed by any person, at all reasonable times, for the purpose of identification.

"Sect. 3. If the deceased person, during his last sickness, of his own accord request to be buried or request that his body be delivered up to his friends, or if, within fourteen days after the death of such deceased person, any person claiming to be and satisfying the authorities that he is a friend or is of kindred to the deceased asks to have the body buried or surrendered to himself, or if such deceased person was a stranger or traveller who suddenly died the body shall not be given up as aforesaid; but, shall, in conformity with such request, be either buried or delivered up to such friend or kindred.

"Sect. 4. Upon conviction of murder in the first degree, the court may order the body of the convict after execution to be dissected. The sheriff shall in such case deliver it to a professor of anatomy or surgery in a medical school established by law in the commonwealth, if so requested; otherwise, he shall, unless the convict's friends desire it for interment, deliver it to any surgeon attending to receive it who will undertake to dissect it." *

---

* The various legislative acts regarding dissection in the State of Massachusetts are as follows:

Since Holmes's retirement in 1882, the standard set in his address has been maintained by his successor and former assistant, Professor Thomas Dwight, who has written:

"How are these things to be conducted in the ideal state? First of all, the rights of the poor have to be respected. There must be no danger that the body of husband, wife, child, or near relation may be taken, through any lack of means on the part of the survivor. On the death of a pauper due notice should be given to those near of kin; these failing to claim, the demands of medical education come next. Still, the principle is to be laid down that such a body is, as it were, only loaned to science, and that it is to be treated with decency throughout the operation of dissection. Any religious emblems or trinkets are to be removed and placed in the coffin, which, later, will receive the remains. The examination being finished, the body is to be decently buried in a cemetery; if possible, in one of the creed of the deceased. Probably the nearest approach in America to this treatment of the remains prevails at Harvard. I like to boast that, for many years, not a single body has been received by the anatomical department, for which I am not ready to give an account. By such a course, all reasonable opposition is obviated. There is no wrong to the living, no insult to the dead, and the needs of science are met."

Sect. 1.	
1830..... 57	§ 3
1834.....187	§ 3
R. S..... 22	§10
1845.....242	§ 1
1855.....323	§ 1
G. S..... 27	§ 1
1879.....291	§ 9
P. S..... 81	§ 1
1891.....185	§ 1
406	
1898.....479	§ 1
1900.....333	

Sect. 2.	
1830..... 57	§ 3
1834.....187	§ 3
R. S..... 22	§12
G. S..... 27	§ 2
P. S..... 81	§ 2
1898.....479	§ 2

Sect. 3.	
1830..... 57	§ 3
1834.....187	§ 3
R. S..... 22	§11
1845.....242	§ 2
G. S..... 27	§ 4
P. S..... 81	§ 4
1891.....185	§ 2
1898.....479	§ 3

Sect. 4.	
1784..... 9	§ 4
1804.....123	§ 1
R. S.....125	§ 2
G. S.....160	§ 8
P. S.....202	§ 8

MEDICAL LAWS, MEDICAL SOCIETIES, MEDICAL LIBRARIES.

THE BOSTON MEDICAL LIBRARY.

From Medical Library and Historical Journal.

CHAPTER XXVII.

MEDICAL LAWS, MEDICAL SOCIETIES, MEDICAL LIBRARIES.

The relation between medical societies, medical libraries and medical schools has been recognized in this country from the earliest times. As factors in medical education, both the society and the library are well recognized to-day. Perhaps no medical school has profited more from these two institutions—societies and libraries—than has the Harvard School. Situated in an ancient colony, established at the beginning of our political independence, surrounded though it was by every species of medical counterfeit—Thomsonian, Perkinean, Hahnemannian, and the rest, the Harvard Medical School became inseparably linked with the medical laws, societies, and educational progress of New England. That is an interesting subject for study. Let us then pass in review the medical laws, societies and libraries which have been factors in the growth of the School. As early as May 3rd, 1649, the General Court at Boston decreed the following *:

"Forasmuch as the lawe of God (Exod;20;13) allows no man to touch the life or limme of any pson except in a judicyall way, bee, it hereby ordered and decreed, that no pson or psons whatsoever that are imployed about the bodyes of men, woemen, and children for preservation of life or health, as phisitians, chirurgians, midwives, or others, shall presume to exercise or putt forth any act contrary to the knowne rules of arte, nor exercise any force, violence, or cruelty upon or towards the bodies of any, whether young or old,—no, not in the most difficult and desperate cases—without the advice and consent of such as are skilfull in

* Records of the Governors and Company of the Massachusetts Bay in New England, 1654; III, 153.

the same arte, if such may be had, or at least of the wisest and gravest then present, and consent of the patient or patients (if they be mentis compotis), much lesse contrary to such advice and consent, upon such punishment as the nature of the fact may deserve; wch law is not intended to discourage any from a lawfull use of their skill; but rather to encourage and direct them in the right use thereof, and to inhibit and restrayne the presumptious arrogance of such as through præfidience of their owne skill, or any other sinister respects, dare be bould to attempt to exercise any violence upon or towards the bodies of young or old, to the prejudice or hazard of the life or limme of men, women, or children."

Even before the passage of that law the Legislature of Virginia had passed an act in reference to the excessive charges of physicians and surgeons. It is dated 1639, and is the earliest legislation in the colonies relative to the practice of medicine. This Virginia act set forth that the demands of a physician or chirurgeon "for the most part exceed the purchase of the patient."* A few years later, 1662 and 1691, the Virginia Legislature passed an Act partly revising the previous one; making a distinction between the charges of those who had studied physic in any university and had graduated therefrom, and those who had obtained their knowledge by the apprenticeship method; for many of the latter, says the reënacted Act in 1736, "often prove very unskilful in the art of a physician."§

Except the incorporation of the Massachusetts law into the Duke of York's law (1665) for the government of the New York province, no further legislation relating to the practice of medicine was enacted in the colonies until about 1753.

Green † gives the following petition presented (1653):

"To the Honored Court:

"Whereas there be many Chirurgions that come over in the ships into

---

*Hening's Statutes at Large, I, 316, 317.

§Hening's Statutes at Large, IV, 509, 510.

†"History of Medicine in Massachusetts," Samuel A. Green, Harvard, M. D., 1854.

this Bay, & here practise both physick and chirurgery to the hazarding of the lives & limbes of some, & the detriment of many, being unskilled in those arts, may it please this Honored Court to take into Consideration whether such ought not to be restrained, & that first they may be exercised by the skilfull & authorised Phisitians & Chirurgions in this towne, & then being found skilfull, & approved by them may by some Magistrates be licensed to practise the time they are resident here, but if any one shall presume on shore to practise without liberty granted, that some fine may be imposed upon him for every such default according to your discretion."

This early Massachusetts law is worth remembering because, in all attempts during the latter part of the nineteenth century to enact laws for the regulation of the practice of medicine, one of the strong arguments offered by the opposition was that the attitude of the state had *always* been one of non-interference; and that argument counted for much in Massachusetts. No such let-alone custom existed, as the above quoted act proves. What actually does exist, however, is the absence of any legal definition of the word "physician." Massachusetts has been unwisely tolerant on that point, and her attitude has brought upon her much just reproach. Another instance will emphasize the question of old custom: In the charter, granted to the newly formed Massachusetts Medical Society (1781) are the words:

"*And whereas it is clearly of importance, that a just discrimination should be made between such as are duly educated and properly qualified for the duties of their profession, and those who may ignorantly and wickedly administer medicine, whereby the health and lives of many valuable individuals may be endangered, or perhaps lost to the community;*

"*Be it therefore enacted by the authority aforesaid,* That the president and fellows of said society, or other such of their officers or fellows as they shall appoint, shall have full power and authority to examine all candidates for the practice of physic and surgery, who shall offer themselves for examination, respecting their skill in their profession."

Before following further this Act of 1781, let us see what the other Colonies or States were doing to improve the stand-

ard of medical practitioners. Toner* gives the New York Act of June 10, 1760, as one of the first of its kind. This Act contains the preamble:

"Whereas many ignorant and unskilful persons in physick and surgery, in order to gain a subsistance, do take upon themselves to administer physick and practise surgery in the city of New York, to the endangering of the lives and limbs of their patients, and many poor and ignorant persons inhabiting the said city, who have been persuaded to become their patients, have been great sufferers thereby; for preventing such abuses for the future"—etc.

This act imposed a penalty of five pounds and costs upon any person practicing without having previously passed an examination in physic and surgery before a council of at least three examiners, i. e., one of his Majesty's Council, the Judge of the Supreme Court, the Attorney-General, or the Mayor.

In 1772 New Jersey, upon the request of its Medical Society, passed a similar act, making it applicable to the whole colony, while the New York act applied only to the city of New York.

In 1773 Virginia and Connecticut passed laws, the former requiring all practitioners to take out a license, the latter attempting the suppression of mountebanks. I do not refer here to laws relating to quarantine and hospitals.

On the outbreak of the Revolution there was, according to Toner †, a total of four hundred physicians in the colonies—physicians who had received medical degrees; while the number of practitioners was over thirty-five hundred. "The experience gained by the medical men who served in the army elevated their views, gave them confidence in the exercise of their professional duties, endeared them to the public, and made them almost oracles in the communities in which they

* "Contributions to the Annals of Medical Progress and Medical Education in the United States before and during the War of Independence," Joseph M. Toner, 1874.

† Toner, loc. cit., 106; 107.

resided. This spirit of gratitude also created friends for the profession in the various legislatures, led to the enactment of laws which were more just and protecting in their character, and popularized the more recent and thorough modes for the scientific study of medicine."

This popular gratitude was illustrated in the New Jersey law of 1783 (the first of the States to pass a law regulating the practice of medicine); the New York laws of 1792 and 1797, and the Maryland law of 1798. In the following fifty years every State in the Union excepting Pennsylvania, North Carolina and Virginia passed laws aimed mostly against quackery. Such laws were generally futile. Says Fitz§: "At the close of the first half of the present century (19th) there were practically no efficient laws controlling the practice of medicine by the licensing of physicians in this country, * * * existing laws had either been repealed or were not enforced; and the regularly educated physicians had ceased in their efforts to suppress quackery by attempting any legislative prohibitory enactments."

The first State law in Massachusetts was that of 1818; it provided that no person could recover his fees unless he had a medical degree or was licensed by the Massachusetts Medical Society. In 1819 this was supplemented by "An Act in addition to an Act entitled 'An Act regulating the Practice of Physick and Surgery'." This second Act imposed the necessity of becoming a licentiate of the Medical Society, or a graduate of the Harvard Medical School, before a person could be entitled to the benefits of the provisions of the Act of 1818. Both of these laws were defective in that neither provided a punishment for failure to procure a license to practice, and there was made no provision to prevent the irreg-

§ R. H. Fitz; Annual Discourse before Massachusetts Medical Society, 1894; "The Legislative Control of Medical Practice;" also his "President's Address," Transactions Association American Physicians, 1894.

ular practitioner from collecting in advance the fee he could not legally collect later.

In the revised statutes of 1836 the provisions mentioned above were omitted, and the only advantages left to the legalized practitioner were the privilege of dissection, and exemption from military and jury duty. An attempt to force by law all practitioners into the society failed, and the misplaced sympathy for quacks aroused by the law made the opportune advent of the notorious Thomson fatal to all attempts to regulate the practice of medicine.

Samuel Thomson was a shrewd and illiterate New Hampshire farmer. He seems to have discerned that the occasional murmurs of dissatisfaction which many regular physicians were uttering against the heroic treatment then in vogue would sooner or later mean medical rebellion. In place of bleeding, mercurials and minerals, he advocated lobelia, marked No. 1; red pepper, marked No. 2; rosemary myrtle, sumac, bayberry, etc., etc., marked No. 3. In 1822 he published the celebrated "Narrative." His trial (1809) for the murder of one of his patients, resulted only in lawsuits against his accusers. These suits, together with the judicial controversies over his patent rights, made him conspicuous. The simplicity of his theories of disease and of treatment won for him popular support. "Friendly Botanic Societies" and medical schools were established in support of his doctrine. His book and medicines had a great sale at twenty dollars for "family rights." The "popular wave" spread into many parts of the country, and his followers succeeded in obtaining legislation favorable to their ambitions.

Thomson died in 1843, at a time when his doctrine had prepared the way for the growth of another species of reaction from the heroic treatment. The new leader was Samuel Hahnemann, founder of homeopathy. Homeopathy appealed to a fairly intelligent class of the community whose social and

political influence was considerable. Many of its adherents were educated, honest practitioners. One need not rehearse that long controversy (1846-1877). So far as legislation was concerned the result was the striking off from the Statutes of Massachusetts (1859) of all laws relating to the practice of medicine, and the effect of this upon the Massachusetts Medical Society will be described later. But observe, that while all the other States of the Union went on making laws to regulate the practice of medicine, Massachusetts and New Hampshire alone remained havens for all medical charlatans and adventurers. Recent legislation illustrates the sorry fact that no attempt at regulating practice was successful until regular physicians agreed to unite with homeopathists and "eclectics" against the lowest forms of quackery. In Massachusetts the medical practice bills of 1877, 1878, 1880, 1885, 1889 and 1891 were each in turn defeated, principally by the argument that the proposed laws were intolerant and exclusive, for the benefit of the few, and were an interference with the rights of the many.

In 1894 Governor Greenhalge, in his annual message to the Legislature said, "I ask you also to consider the expediency of requiring that practitioners of medicine be registered. * * * In every State of the Union except five, such a system of registration has been established, and it cannot fail to protect the public, and at the same time help to maintain a high standing among medical practitioners." A bill was introduced in conformity with the Governor's request. Violent and determined opposition was encountered at every stage. The bill finally was enacted June 7, 1894, and is known as Chapter 458 of the Acts and Resolves of 1894.

The passage of this registration law in 1894 carries us back by its provisions to the Act of 1781, incorporating the Massachusetts Medical Society. Both recognize the distinction between registered and unregistered physicians, a distinction

based upon an educational qualification for the practitioner. Let us then go back to the birth of the Massachusetts Medical Society and trace its influence so far as that bears upon the story we are telling.

In the Act incorporating the Massachusetts Medical Society, dated November 1st, 1781, it was stipulated, "That the President and Fellows of said society, or such other of their officers or fellows as they shall appoint, shall have full power and authority to examine all candidates for the practice of physic and surgery (who shall offer themselves for examination) respecting their skill in their profession; and if, upon such examination, the said candidates shall be found skilled in their profession, and fitted for the practice of it, they shall receive the approbation of the society, in letters testimonial of such examination, under the seal* of the said society, signed by the president, or such other person or persons as shall be appointed for that purpose." It was further provided that if the officers of the Society obstinately refused to examine any candidate, such officers should be subject to a fine of one hundred pounds, and the sum was to go to the candidate.

The Massachusetts Society was the tenth medical society formed in this country. There were: (1) A medical society in Boston founded in 1735 and traced up to 1741. William Douglas seems to have been the principal in this society and a leading contributor to its publications. "The Boston Weekly News-Letter" for November 13th, 1741, tells of an operation for stone in the bladder: "A Medical Society in Boston, New England, with no quackish view as is the man-

* The diploma given by this society was a unique affair. It measured twenty-nine inches in length, by twenty-six in breadth, was of curious workmanship and design, having prominently displayed at the top a figure of Aesculapius, together with the coat of arms of the State; and at the bottom the seal of the Society, in red wax, placed upon a circular piece of tin which had been securely fitted to the parchment.

ner of some; but for the Comfort and Benefit of the unhappy and miserable sufferers by the excruciating Pain, occasioned by a stone in the Bladder, do publish the following Case." Nothing further is known of that old Boston Medical Society. (2) "A Society of Gentlemen in New York, founded about 1749, for the weekly discussion of Medical Subjects." The only record of this society known to exist is a manuscript in the library of the New York Academy of Medicine with the title, "An Essay on the nature of ye malignant Pleurisy that proved so remarkably fatal to the Inhabitants of Huntington, Long Island; and some other places on Long Island, in the winter of the year 1749, Drawn up at the request of a Weekly Society of Gentlemen in New York, and addressed to them at one of their meetings, by Dr. Jno. Bard, New York, 1749." (3) The Philadelphia Medical Society founded in 1765, which in 1768 became a part of the American Society for the Promotion of Useful Knowledge, later known as the American Philosophical Society. (4) The Medical Society of New Jersey founded July 23, 1766. This is the oldest of the existing medical societies in this country. In 1790 an offshoot of this society styled itself "The Medical Society of the Eastern District of New Jersey," and for awhile rivaled successfully the parent society: but it died in 1807. (5) A Medical Society founded in New York November 14, 1794, and called the "Medical Society of the State of New York" is often confounded with the society of 1749 mentioned above; but the manuscript records of its meetings, now in the Library of the New York Academy of Medicine, point to the existence of two distinct societies. In 1806 this society of 1794 became the "Medical Society of the County of New York." (6) The Boston Medical Society was founded May 14, 1780, and like the New Jersey Medical Society was chiefly concerned with the regulation of fees. The founders of this society were Danforth, Rand, Jr., Kast and John Warren. This society

is often confounded with the Massachusetts Medical Society, but the latter never undertook to regulate the fees of practitioners. Besides fixing the fee table, the Boston Medical Society opposed the request of President Willard (April 19, 1784) that the Overseers of the Poor allow the teachers and students of the medical school to attend the hospital of the Almshouse, where Warren had been attending physician and surgeon for two years. The details of these "Extraordinary Resolutions of the Boston Association," as they were called by Warren, have been given elsewhere in this history. No further records of the life of the Society appear until the formation of the Boston Medical Associaton in 1806, chartered in 1810. This society had as its guides James Jackson and John Warren, and the high moral sentiments inculcated by those men have ever since been the basis of action among their successors. The society under the presidency of J. Collins Warren flourishes to-day.

Besides these medical societies, there were two societies of medical students in existence at the time of the Revolution: (7) one among the students at Harvard College, and (8) one among the medical students in Philadelphia. The Harvard organization (7) owned a skeleton, and they dissected animals. John Warren, Eustis, Adams, Norwood and Townsend were the leading members, and the interest among their fellows was continued through the war. Eustis and Adams frequently refer to this society in their letters to Warren and others during those years preceding the founding of the Harvard Medical School. This society was the first society of medical students formed in America. Under the guidance first of Joseph Warren, and stimulated later by John Warren it helped make possible the foundation of a medical school. The members of the society were often suspected of procuring material for their dissections by the shady methods then in vogue. Upon the establishment of the Medical School the

need of the society's separate existence ceased and nothing further is known about it. (9) The American Medical Society founded in 1773 was a more formal and extensive affair. A regular constitution was adopted, and medical articles of a creditable nature were read at the meetings. These papers were usually published in the "Universal Asylum and Columbian Magazine."

The charter members of the Massachusetts Medical Society numbered thirty-one, and the membership was limited to seventy. These men were termed Fellows, while those who passed successfully the Society's examinations did not become members, as they do to-day, but were simply Licentiates—that is to say, the society judged them persons fit to practice medicine. This rather complicated arrangement was fashioned after the type of English educational bodies of that time, especially the Royal College of Physicians. However, the spirit of the times in America was opposed to such discrimination, so it is not surprising to find many respectable practitioners refusing to submit themselves to an examination which resulted in apparent professional inequality.

One of the articles of the Harvard Medical School, established the following year, recited, "That every student who on examination shall be judged qualified to enter upon the practice of surgery, shall have a certificate under the seal of the University, that he has had a regular medical education, and that on a public examination he has been found qualified for such practice."

As we have seen, the Medical Society claimed that the granting of a diploma by the University was an interference with their own charter rights to issue letters testimonial to qualified applicants. The point at issue was finally adjusted satisfactorily. In the meantime the legislative Act of February 10, 1789, defined more fully the duties of the Society in regard to the examination and education of candidates. Then came

the important Act of March 8, 1803. This law removed the restriction on the number of members in the Society, and abolished the election of Fellows by the Society. District Societies were formed, censors were established, and the standard of medical education was raised. The State law contained the following words: "and every person, who shall receive the said letters testimonial, and such also as hereafter may be admitted to the degree of bachelor of medicine at Harvard University, shall be entitled to the use of the libraries of the society, under such restrictions as the councillors may direct: and after three years' approved practice in medicine and surgery, and being of good moral character, and not otherwise, shall, upon application * * * be admitted a member (Fellow) of the said corporation."

In 1806 the following rule was established by the Society: "To promote the laudable designs of the Legislature in forming and incorporating this Society, to prevent as far as may be all unqualified persons from practising medicine or surgery, and in order to discourage empericism and quackery; it shall be deemed disreputable and shall be unlawful for any Fellow of this Society, in the capacity of physician or surgeon to advise or consult with any person, who having been a Fellow of this society, shall be expelled therefrom, or with any person whatsoever, who shall hereafter commence the practice of medicine or surgery within this Commonwealth, until he shall have been duly examined and approbated by the Censors of the Society or by those of some district Society." The assistance given by the Medical Society to the Harvard Medical School in frustrating an attempt (1811) to establish a rival medical college in Boston has been told in previous pages. It is not necessary to give the laws of 1818 and 1819 by which members of the Society and graduates of the Harvard Medical School were exclusively and equally made beneficiaries of the provisions of those acts in the matter of collecting fees.

In 1831 the "three-years approved practice" clause of the 1803 Act was repealed, and in the following year Licentiates of the Society and medical graduates of Harvard and Berkshire were allowed to become Fellows by signing the by-laws. In 1837 the same privileges enjoyed by graduates of Harvard were extended to the graduates of the Berkshire Medical School, while all practitioners outside these three classes,—Harvard graduates, Berkshire graduates, and members of the Medical Society, came to be regarded as irregular practitioners.

In 1850 Fellowship was confined to Harvard and Berkshire graduates, to those having medical degrees approved by the Censors, and to those who passed a Censors' examination, as well as to respectable practitioners of fifteen years practice prior to 1852, if elected by a two-thirds vote of a District Society. In 1860 the by-laws required all but medical graduates of Harvard and Berkshire to be examined by the Censors, and in 1874 it was voted that *all* candidates must be examined by the Censors. The present Code of Ethics was adopted in 1884.

From such a sketch it may be seen that the Massachusetts Medical Society has always been active in advancing the standard of medical education. Starting with a limited mem-

---

The following "amount" for an annual dinner (1833) of the Massachusetts Medical Society is interesting:

196 Dinners	$1.00		$196.00
42 botts Claret	.75		31.50
33 " S. Madaria	1.00		33.
41 " Cider	.37½		15.37½
12 " Porter	.50		6.00
11 Gals Lemonade	1.50		16.50
9 doz. Cigars	.37½		3.37½
			$301.75

For each.....$1.54
Wine for each..... .33

bership and with the idea of making the society a scientific body, it cautiously increased its membership, guarding jealously the purposes of its inception. Its aim has been to raise the standard of the whole rather than to promote the interests of the few. It has prescribed courses of study, and has pointed out the means of acquiring the best information; it has been a medical school in itself with the highest standard of qualification,* it has made available to its members the best literature of the day; its members furnished the first American Pharmacopeia; smallpox, spotted fever and cholera were robbed of their virulence, and the public was protected through the activity and wisdom of this society; it made the study of anatomy a scientific pursuit; it established proper medical investigations in place of the antiquated coroner system; its members organized the first Board of Health in the United States, and inaugurated a system of registration of vital statistics which has served as a model for other States and other countries. The seal of its approval, after a thorough and impartial investigation of vaccination and surgical anaesthesia, first inspired public confidence in those procedures; its persistent effort to mark a distinction between educated and uneducated practitioners of medicine within its jurisdiction was rewarded by a notable victory. Finally, we see the Massachusetts Medical Society, with the wisdom of the sage and the vigor of youth, at the end of her one hundred and twenty-third year, the guide and confidant of a harmonious and prosperous family. The Harvard Medical School has every reason for gratitude to this Society, which has been its unswerving ally for a hundred years.

Medical libraries in this country before 1800 were not as numerous as one might suppose. The first library was founded

* Israel Atherton, A. B., Harvard, 1762, recommended October, 1789, a course of five years of study to those who had not received a collegiate education.

at the Pennsylvania Hospital in 1760, and this was followed by that of the University of Pennsylvania Medical Department in 1765, by the Dartmouth library in 1769, by one at the College of Physicians in Philadelphia in 1788, by the Harvard Medical School library in 1782, and by that of the New York Hospital in 1796. J. S. Billings says,* "There are a few books written, prior to 1800, which every well educated medical man should (I will not say read, but) dip into, such as some of the works of Hippocrates and Galen, of Harvey and Hunter, of Morgagni and Sydenham; but this is to be done to learn their methods and style rather than their facts and theories; and by the great majority of physicians it can be done with much more profit in modern translations than in the originals. The really valuable part of the observations of these masters has long ago become a part of the common stock, and the results are to be found in every text-book."

Just as the Massachusetts Medical Society had established and maintained a high standard of qualifications among the physicians of New England, so do we find her leading the way to the founding of medical publications and medical libraries. In 1785 the Society appointed corresponding secretaries for the different counties of Massachusetts (then including the district of Maine) for the purpose of promoting professional intercourse and progress.§ In 1790 the Society issued a number of "Medical Papers." The amount of the assessments did not warrant another issue until 1806. There was a third in 1808. These papers comprise the first volume of the series of Communications, still issued by that Society, and these Communications were known as "The Library of Practical Medicine," from 1831 to 1868. From 1856 to 1871 they

* Address on "Our Medical Literature," by John S. Billings, M. D., 1881, International Medical Congress, London, England.

§ In 1786 the Society voted twenty pounds for the purchase of books; in 1789, thirty pounds.

were called "The Publications of the Massachusetts Medical Society."

In 1805 John C. Warren and James Jackson formed a private medical Society to which were invited Dixwell, Coffin, Bullard, Shattuck, Jeffries, Fleet and Homans. It was called The Second Social Society or Boston Medical Library. This private Society had an annual assessment of ten dollars, and met weekly (Thursday) for the purpose of reading and discussing medical papers. The meetings continued until the death of all the members. From the announcement we read:

"*December* 30, 1805."

"The Boston Medical Library will be opened on Thursday next at Dr. Fleet's.

"A few books only have arrived.*

"N. B. Books received and delivered on Mondays and Thursdays between three and five oclock, P. M."

In 1807 this library was removed to 39 Marlborough Street, already the medical centre of the city, and placed in charge of an apothecary, Amos Smith. The list of books in the catalogue of that date shows twenty-nine titles and forty-three volumes.§ This collection increased gradually, until in 1823 it comprised 1311 volumes, valued at $4500. Three years later this Boston Medical Library ceded its collection of books to the Boston Athenaeum upon the following terms:

"That each proprietor of the medical library should have the privilege of a life subscriber on the payment of five dollars per annum, and should become a proprietor of the Athenaeum by paying one hundred and fifty dollars, such life-subscriber to have the right, on his removal from Boston, to transfer his share for and during the period of his life; that the members of the medical library should have access to the privileges of the

* A circular to the members during this year stated that "the books ordered last year from Europe have not yet been received."

§ "The Medical Libraries of Boston," by James R. Chadwick, M. D., 1876. Much of the information on "Libraries" given here was obtained through Dr. Chadwick.

Athenaeum during the then coming year for the sum of ten dollars; and that the medical department should receive its full proportion of the sums applied hereafter to the purchase of books."

The Boston Athenaeum, founded in 1807, was the successor of the Anthology Club, as the Anthology Club had been of the Natural Philosophy Society founded in 1801 by President Kirkland. The object of the Anthology Club was to establish a general reading room and library of reference. No books were circulated by the Athenaeum until 1826, when it received the library of the Boston Medical Library. The only surviving members of the Second Social Society at the time of this transfer in 1826 were Jackson and Warren.

Medical libraries have a certain distinction, in that a great part of their usefulness depends upon contemporary literature, especially upon periodicals. Medical libraries must contain what Holmes called the dead medical literature and the live medical literature. No one disputes the value of the ancient literature. Without it there would be no progress save in a circle. As the poet says, "The dead is not all ancient, the live is not all modern."

Development of the medical periodical is modern. At first the periodical consisted of papers read before a medical society, and published annually; or, occasionally, more often. The first medical periodical of record was "Acta Medicorum Berolinensium," published in 1722. The next was "Medical Essays and Observations," begun in Edinburgh in 1731. The latter annual became a quarterly in 1773 under the name "Medical and Philosophical Commentaries." It returned to the annual form about 1793, as the "Annals of Medicine." That *quarterly* was the first medical quarterly published in English. Meanwhile the Germans issued a second work (Leipsic 1753) entitled "Commentarii de Rebus in Scientia Naturali et Medicina gestis." The first French medical periodical appeared in 1754, published by Vandermonde, at

Paris. It had the title "Recueil Periodique d'Observations de Médecine, de Chirurgie, et Pharmacie." In 1759, the first number of the "Journal de Médecine" was issued at Paris. Thus it was that the first medical periodicals took their orign at three medical centres. The prominence of the Edinburgh School makes conspicuous the absence of a London medical journal.

Now this introduction of medical periodicals had an important bearing on medical progress. It accentuated the breaking away from a blind following of the *fathers*. Hippocrates, Celsus, Galen, and even Paracelsus, were still venerated, though not idolized. The new literature succeeded in making pathology, surgery and therapeutics universal rather than local. It gave to all physicians many of the advantages hitherto enjoyed by the few who had visited the Universities and Hospitals of foreign lands. It brought new discoveries, new methods of research, new modes of treatment to receptive minds and supple hands, to prove or reject. Such methods of imparting knowledge reached these shores at an opportune time. Medical men were no longer taking all their ideas from abroad. They were coming to respect their own resources; and so, on July 26, 1797, three American physicians (Samuel L. Mitchell, Elihu H. Smith and Edward Miller, who had never visited Europe) published the first number of the "New York Medical Repository." This periodical was issued quarterly, and had a life of twenty years. The second American periodical was the "Philadelphia Medical and Physical Journal," founded in 1803 by Benjamin Smith Barton. It ran through three volumes, when it was superseded by the "Medical Museum," edited by John Redman Coxe. In 1809 Tobias Watkins published the "Baltimore Medical and Physical Recorder," and in 1811 Nathaniel Potter established the "Baltimore Medical and Philosophical Lyceum." "The Philadelphia Eclectic Repertory," started in 1811 by a society of phy-

sicians and carried on until 1820, gave to the world McDowell's first account of ovariotomy.

In 1811, in Boston, Jackson, J. C. Warren, Channing, Jacob Bigelow, Gorham, Hayward, Ware and Webster formed a club which met weekly for the review and criticism of medical papers offered for publication. The "New England Medical Journal" resulted, and the first number of that periodical was issued in January, 1812. Here is the prospectus:

"PROPOSALS

"BY THOMAS B. WAIT AND CO., BOSTON, FOR PUBLISHING

"A WORK, TO BE ENTITLED THE

"NEW ENGLAND JOURNAL

OF

"MEDICINE AND SURGERY,

AND

"THE COLLATERAL BRANCHES OF SCIENCE.

"TO BE CONDUCTED BY A NUMBER OF PHYSICIANS.

"Before a new work, especially a Journal, presents itself to the world, it is customary to exhibit, through the medium of a prospectus, the object it proposes, and the claims it thence derives on the public countenance and support.

"The nature and objects of a Medical and Philosophical Journal are generally understood to consist in the following particulars: 1st. In the collection and preservation of valuable facts and observations from original sources, which, probably, would not reach the light through any other channel. 2d. In exhibiting at an early period to its readers such interesting discoveries and speculations from abroad, as from their remoteness, and other circumstances of difficulty, would generally be accessible only to a few.

"THE acknowledged utility and satisfactory encouragement of periodical works of the above character in almost every part of Europe and the United States, is considered by the editors of the intended publication, as a pledge of its success. In the United States alone not less than eight or ten Medical Journals have been carried on with more or less success during the last ten years. In the New England states, however, no one is at present known to exist. Relying on encouragement from a section of the union, which, as they are willing to believe, is not disposed to loiter in the paths of science, or to withhold its patronage from literary enter-

prise, the editors confidently submit their plan to the consideration of the public.

"THE Journal will generally consist of three departments; the first appropriated to original communications, and to such papers as may be selected, on account of their peculiar merit, from foreign publications; the second to a review; and the third to scientific intelligence. For the supply of original matter, the editors depend not only on their own exertions, but also on a correspondence with such gentlemen of science as shall be inclined to favour them with the results of their investigations. The pages of the Journal will always be open to the accurate observer of nature, the useful experimenter, and the rational theorist. Controversial essays on the various unsettled points of medical science will be admitted with the strictest impartiality, provided they contain nothing personal nor acrimonious. Professional gentlemen throughout the Eastern states will experience a convenience in the *vicinity* of the work, not realized by those who avail themselves of the slow and uncertain channels of remote publications.

"FOR completing the remaining departments the editors rely on their own diligence, aided by an early and general access to foreign publications, which in a commercial metropolis is effected with tolerable facility. As their principal aim is to render the work *useful*, particularly to gentlemen of the faculty who have not access to large libraries and modern publications, it is contemplated to give, from time to time, such histories of European practice, and such abstracts of new and interesting books, as a constant intercourse with sources of the highest authority shall enable them to furnish.

"THE editors have been encouraged to attempt this publication by the opinion, that a taste for medical literature has greatly increased in New England within a few years past. This they are ready to impute in some measure to the valuable productions of the Massachusetts and Connecticut Medical Societies. Yet it is evident that these publications are not calculated to gratify the increasing desire for medical information, both because they are not made frequently, and because they consist only of original cases. The sea-port towns of the United States are the first receptacles of European science, and from these the most direct channels ought to be formed, through which it might be poured into every part of our country. New methods of practice, good old ones which are not sufficiently known, and occasional investigations of the modes in common use, when thus distributed among our medical brethren in the country, will promote a disposition for inquiry and reflection, which cannot fail to produce the most happy results.

"To the cultivators of science generally throughout our country, the work is offered as an early vehicle of information in the several branches of philosophy and science. To those who justly appreciate the import-

ance of regular intelligence in the various progressive sciences, a work on the plan of this Journal will not, it is hoped, be altogether unacceptable."

"Boston, Sept., 1811."

"☞ Subscriptions to be returned, by the first day of January next, to the publishers; to whom communications (post paid) are to be addressed."

"Subscriptions for the above work received by W. Hilliard, Cambridge; Henry Whipple, Salem; E. Little and Co. and Thomas and Whipple, Newburyport; Wm. B. Allen, Haverhill; J. Avery, Plymouth; I. Thomas, Jr., Worcester; Simeon Butler, Northampton; Massachusetts:..... A. Lyman and Co. Portland; E. Goodale, Hallowell; Maine:.....C. Tappan, and C. Pierce, Portsmouth; J. Hinds, Hanover; G. Hough, Concord; New Hampshire:.....Swift and Chipman, Middlebury; P. Merrifield and Co. Windsor; J A. Gallup, Woodstock; J. K. Baker, Burlington; Vermont:.....H. G. Hale and Co. Hartford; Beers and Howe, New Haven; Connecticut:.....Mess. Collins, New York; S. Morford, Princeton, (N. J.); John F. Watson, Philadelphia; F. Lucas, Baltimore; Daniel Rapine, Washington city; Joseph Milligan, Georgetown, (D. Col.); R. Gray, Alexandria; J. W. Campbell, Petersburg, Virginia; Morford, Willington, and Co. Charleston, South Carolina."

"Conditions. THE work will be published in numbers, one every three months; the first number to appear in January, 1812.

"Each number to contain at least one hundred pages, octavo; to be printed on good paper, and a neat type; and to make a volume, yearly, of four hundred pages, or upwards.

"Price to subscribers, *two dollars* a year; to non-subscribers, *seventy-five cents* a number."

Bartlett* said that more professional knowledge was at this time attainable in a single season than was known to Hippocrates, Galen, and their successors till the beginning of the eighteenth century; "twenty-seven foreign medical works have been reprinted in Massachusetts, sixteen of which were either in whole, or in connection with others, by Isaiah Thomas."

---

* A Dissertation on the Progress of Medical Science in the Commonwealth of Massachusetts;" read before Massachusetts Medical Society, June 6, 1810, by Josiah Bartlett.

Thus in fifteen years the more important medical centres in this country had established medical journals more or less intimately connected with the medical schools.

Warren says§ that one of the designs of the medical journal in Boston was to aid the Medical School. That Journal was measurably successful. Wistar wrote from Philadelphia: "we are much pleased here with your periodical work—the 'New England Journal.' The talents and the information which are displayed in it will commend it to the respect and attention of all well-informed physicians, and must establish its reputation."

In 1823 it was evident that a weekly publication would be better suited to the needs of the profession, so J. V. S. Smith began the publication of the "Medical Intelligencer," in Boston. He was succeeded by Coffin in 1825. At that time the editors of the "New England Medical Journal" were Channing and Ware. Those interested decided to unite the two journals, and the design was accomplished by Warren, who paid two-thirds of the price asked by Coffin (six hundred dollars) and assumed the editorship of the new weekly, which was christened "The Boston Medical and Surgical Journal." The first issue appeared in 1828, and the publication continues to this day. For many years the "Boston Medical and Surgical Journal" was the only regular weekly medical publication in this country.

Boston had then a population of about sixty thousand and there were seventy-one regular physicians. The irregular physicians, mostly of the Thomsonian order, were numerous, however. It was estimated that Thomson's followers, lay and professional, numbered one-sixth of the population of the city, and that users of patent medicines constituted another sixth. Three years later (1831) reports say that the Massa-

§ "Life of John C. Warren," by Edward Warren, vol. 1, p. 117.

chusetts Medical Society included nearly all the educated practitioners of medicine and surgery in the State. In 1848 the number of physicians in the State had reached 1237. Statements differ as to the number who had became members in the Medical Society, but a conservative estimate was about seven hundred.

On December 21, 1874, Henry I. Bowditch, F. I. Knight, O. F. Wadsworth, James R. Chadwick, O. W. Holmes and A. L. Mason met at Bowditch's office and planned the foundation of the Boston Medical Library Association, which was successfully inaugurated with a membership of 133 members, on August 20th, 1875. The Association was fortunate in its selection of a librarian. J. R. Chadwick has served as librarian since the establishment of the Library, and all men admit that the position which the Boston Medical Library occupies to-day has been reached mainly through his constant, enthusiastic and fruitful labors. The other officers chosen on August 20, 1875, were: President, Oliver Wendell Holmes; Vice-President, Henry Ingersoll Bowditch; Treasurer, Amos Lawrence Mason; Clerk, Oliver Fairfield Wadsworth; Executive Committee, The President, Edward Wigglesworth, Frederick Irving Knight, John Collins Warren and William Lambert Richardson. Committee on Admissions: James C. White, Henry P. Bowditch, Thomas Dwight. The rooms first occupied were at No. 5 Hamilton Place.

It was not any dearth of libraries containing medical literature in Boston and Massachusetts that inspired the founders of the Boston Medical Library Association. Here is a fairly complete list of libraries then in existence here:

1. The Boston Athenaeum, already mentioned.

2. The library of the Harvard Medical School. This library grew out of the action of the Medical Faculty, November 1, 1816, "That a new library be formed in the Massachu-

setts Medical College, by donations of the Medical Faculty, to consist principally of elementary works."

3. The Library of the Massachusetts Medical Society, founded in 1781, and deposited later with the Boston Public Library, founded in 1852. The City Library had about 9000 volumes in its medical department, and was increasing at the rate of over five hundred volumes a year. It had the best and most extensive list of journals and periodicals of any of the libraries in the city. It had been the recipient of many private collections of medical libraries of deceased or retired physicians.

4. The Treadwell Library at the Massachusetts General Hospital, founded in 1857 through the gift of J. G. Treadwell, of Salem. Treadwell bequeathed his own library and the sum of forty thousand dollars, of which five thousand dollars were set aside as a permanent fund, the interest to be devoted to the purchase of books. This library numbered 3527 volumes at the time of the founding of the Boston Medical Library Association

5. The Library of the Boston Society for Medical Observation, founded in 1846, contained a collection of over nine hundred volumes, including many valuable American, English, French and German Journals.

6. The Library of the Boston Society for Medical Improvement, founded in 1828, had four hundred and seventy-four volumes, including many rare historical books.

7. The Library of the Gynecological Society of Boston was founded in 1839.

8. The Library of the American Statistical Association was founded in 1839. These Libraries of the four last named societies were combined in 1875, and were placed with restrictions in the Boston Medical Library.

9. The City Hospital Library was founded in 1865, with one thousand volumes.

Besides these libraries there were many large and extensive private libraries, many of which have since come under the care of the Boston Medical Library. The aggregate contents of the Boston Medical Library at the end of its first year was 2639 volumes of journals, 404 volumes in the obstetrical section, and 1445 in the general library, making a total of 4488 volumes in all.*

The Boston Society of Natural History and the American Academy of Arts and Sciences had in Boston a combined library of nearly 30,000 volumes, covering a wide range of subjects, many of them relating to medicine.

The College at Cambridge had a medical department of 3783 books. This had been founded in 1802 by Ward Nicholas Boylston, who gave to the College a valuable collection of eleven hundred volumes as a special tribute to his uncle, Zabdiel Boylston. To W. N. Bolyston the Medical School also is indebted for a valuable collection of anatomical preparations, constituting the museum of the celebrated Dr. Nichols. That was the Ward Nicholas Boylston who established the annual prize for the best medical dissertation by a student and recent graduate of the Medical School.

Certain Districts of the Massachusetts Medical Society had founded libraries for their own members. Especially, there were those of the Essex South District at Salem, 1805; the Worcester District, 1845; the Berkshire District at Pittsfield, 1879; and the Worcester North District at Fitchburg, 1858.

The Boston Medical Library Association soon outgrew its first home, and on December 3, 1878, it dedicated to its uses the building at 19 Boylston Place. At this meeting there was an unmistakable note of approval by those best qualified to judge of its progress; and there resulted a confidence in its future, far in excess of the most sanguine hopes of the initia-

* From First Annual Report of the Library.

tors of the undertaking. The President, Oliver Wendell Holmes, gave the dedicatory address; J. S. Billings of Washington made a stirring speech, President Eliot spoke for the University, upon the character of the work and its significance in medical education; George H. Lyman, the President of the Massachusetts Medical Society, expressed that Society's sympathy in this work which had for one hundred years been its own special object. Henry I. Bowditch spoke for the founders of the Association.

From such a start there followed expansion slow but inevitable; and in less than fifteen years there were numbered in the catalogue more than 10,000 volumes for which there were no accommodations on the shelves. After the financial panic of 1893 an active group of the younger physicians took the matter in hand, and raised $70,000 by subscription in one year. This was added to the sum realized by the sale of the Boylston Place property, and realized a total of over $110,000 with which to procure new quarters. A handsome building was erected at No. 8 The Fenway and was dedicated on January 12th, 1901. Here is what J. R. Chadwick said in 1903, about the undertaking:*

"First, as regards our collection of books and periodicals, I am frequently asked how they have been procured with little if any expenditure of money. The ways were numerous, but all natural. We started with about 1,500 volumes loaned to us by the two Societies above mentioned; with a list of these I personally visited every physician in town who was known to have a considerable library, and from these I solicited, and usually obtained, such as I wanted. From these sources I increased the library so that, at the end of the second year it numbered 6,000 volumes. The editors of the "Boston Medical and Surgical Journal" have given us for twenty-seven years the journals received by them in exchange, by which libral succor we have been able to lay before our readers an abundance of current literature, without expense to us. Of course a limited number of journals had to be secured by subscription

* "The Boston Medical Library," by James R. Chadwick, Librarian, "Medical Library and Historical Journal," April, 1903.

BOSTON MEDICAL LIBRARY—JOHN WARE HALL.

From Medical Library and Historical Journal.

BOSTON MEDICAL LIBRARY—SPRAGUE HALL.

From Medical Library and Historical Journal.

to insure prompt delivery. The same course has been followed by the editors of the "Annals of Gynecology and Pediatry" since its foundation in 1887. From instrument-makers and drug firms we have from time to time received the accumulations of Journals which they received gratuitously because of their advertisements.

"As soon as we had made it evident we were meeting a long-felt want and were to be a permanency, we began to receive, as gifts or on deposit, the libraries of other associations; the Gynecological Society of Boston, the Boston Dispensary, the Roxbury Athenæum; more recently the library of the Harvard Medical School, exclusive of such volumes as were reserved for use in connection with its several laboratories; the medical department of the Harvard College Library in Cambridge, etc.

"All the medical journal clubs, which subscribe for and circulate current periodicals among their members turn them over to us when they have made the circuit.

"Very soon we began to receive, as bequests or gifts of surviving relatives, the libraries of all deceased physicians, among the most important of which I would mention those of Dr. Edward H. Clarke, Dr. John E. Tyler, Dr. George C. Shattuck, Dr. Edward Jarvis, Dr. Calvin Ellis, Dr. R. W. Hooper, Dr. Samuel Cabot, Dr. John O. Greene, Dr. F. H. Hooper, Dr. T. B. Curtis, Dr. Edward Wigglesworth, Dr. O. W. Holmes, Dr. A. M. Sumner, Dr. W. C. B. Fifield, Dr. Edward Jacob Forster and many others.

"The completeness of our files of journals and transactions is largely due to a 'want book,' which has gone through three editions in manuscript, wherein, upon the left hand page, is entered the title of every periodical of which we have any part, while on the opposite page is entered every volume or number needed to complete the file. By invariably carrying this with me upon my travels in this country and Europe, I have been able gradually, at a trifling expenditure of money, or by exchange with other libraries, to complete the files of all the leading periodicals of the world.

"Our aim has been to devote all our energy, and such small sums of money as could be spared from current expenses, to the department of periodicals, as being the class of literature most in demand, especially since the publication of the "*Index Catalogue of the Library of the Surgeon General's Office*," the "*Index Medicus*" and the "*Bibliographia Medica*." We have over 20,000 volumes of periodicals as contrasted with 15,000 books, not including our duplicate library for home circulation, which numbers 3,000 to 4,000 volumes of the principal periodicals.

"Finally, as to finances. For the first three years we depended upon the annual dues of 133 members at the outset, and gradually increasing. In 1878 we raised by subscription over $10,000 with which we bought the house, 19 Boylston Place, remodeled it and found ourselves with a

mortgage of $8,000, which was paid off three years later. In 1879 we established a Directory for Nurses from which there has been an annual profit of from $2,000 to $4,000. Since our removal to Boylston Place we have leased our halls to various medical societies for their meetings, from which the revenue has been from $1,000 to $1,200 a year. Finally, in 1898-1899 we raised by subscription $70,000 with which we built, and moved into the present building, finding ourselves with a mortgage of $25,000 on which the interest is to be met for five years by seventy of the younger members, and a second mortgage of $22,000. This year (1903) we have assumed another mortgage of $24,000 for the purpose of purchasing the adjoining lot of 3,000 square feet and holding it for future development. A few funds, varying from $300 to $1,500 in memory of deceased members, the interest of which is devoted to the purchase of books, complete the list of our assets.

"Our membership now consists of 6 life members compounding the annual dues by a single payment of $150, of 410 active members paying $10 yearly and 159 associate members paying $5 yearly.

"We have the utmost faith in the future, based on reasonable expectations of being able to meet the obligations which we have assumed, in the near future. Last year's income from all sources amounted to over $10,000 and our expenses exceeded that sum by only $200.

"P. S.—Our faith is shown to have been well founded, by the official announcement made, while these pages have been going through the press, that our Library is a beneficiary, under the will of the late Robert C. Billings, to the extent of $50,000.

"Boston, March 21, 1903."

Besides the various societies already named in this chapter, there have been or now exist others composed almost exclusively of Harvard Medical Graduates,—societies which have done much directly and indirectly to foster Harvard's interests. Some consideration of their objects and workings is appropriate here.

The Boylston Medical Society of Harvard University—an undergraduate organization—was founded in January, 1811. It had for its purposes the promoting of emulation and inquiry, as well as the dissemination of medical knowledge among students of the Medical School. Persons other than Harvard students may be admitted to the society by a unanimous vote of the members. A person duly elected to the

BOSTON MEDICAL LIBRARY—HOLMES HALL.

From Medical Library and Historical Journal.

Society pays an annual fee of three dollars. After he has performed this obligation for two years, or in less time if he has taken his degree in medicine, he may be made an honorary member. The Society gives a diploma in the form of certificates of membership to those members who have performed their duty to the society. Meetings are held weekly during the academic year and as often as the Society may at other periods determine. At these meetings the members, each in his turn, present dissertations and cases, and other casual topics are discussed. The funds of the Society arising from the entrance fees and fines, after defraying the incidental expenses, were originally devoted to the purposes of establishing a library. Since the Medical Faculty undertook the expense of providing and maintaining a free library for the members of the Medical School, the funds of the Boylston Society have been appropriated in prizes for the best anatomical preparation made by members during the terms of the Lectures. All these prize preparations have become the property of the Boylston Society, and form the valuable cabinet which that Society has presented to the school.

In 1902 recent graduates of the School, former Boylston members, formed the Aesculapian Club, to carry on the meetings in which, as undergraduates, they had taken part. This Club adds to its membership, annually, such Boylston men as are graduated in Medicine. One of its objects is to stimulate and perpetuate interest in and loyalty to the Harvard Medical School.

The Boston Society for Medical Improvement was incorporated by an Act of the Legislature, March 20, 1839. The names mentioned in the first section of that Act are those of John Ware, Jacob Bigelow, and Enoch Hale. The objects stated are the cultivation of confidence and good feeling between members of the profession, and the eliciting and imparting of information upon the different branches of medical

science. This Society founded a library, and its meetings were held fortnightly. In 1839 the Society had been in existence since February 19, 1828, and had already come to be the leading medical society of Boston. It started with the following members: Zabdiel B. Adams, John P. Spooner, George W. Otis, Jr., Joshua H. Hayward, D. Humphreys Storer, Horatio Robinson, Jas. M. Whittemore, J. G. Stevenson, Joseph W. McKearn, Enoch Hale, and John Ware. The list was soon increased to twenty-five, and included Winslow Lewis, Benjamin Lincoln, George Parkman, Walter Channing, and John D. Wells. The first meetings were held at the homes of members, and were quite informal. Each member reported verbally such cases or observations as interested him, especially on obstetrical practice and infectious diseases. A pathological museum was started, and the new born "Boston Medical and Surgical Journal" received the Society's support. In 1830 the Society procured rooms over Smith and Clark's drug store on Washington Street. It started a library for its members, and with the stimulus afforded by the election to membership of J. B. S. Jackson, O. W. Holmes, Jacob Bigelow and Jeffries Wyman the growth of the museum was increased. About the year 1840 interest began to wane; new blood was needed. Of this it received the best; Samuel Cabot, Jr., Henry J. Bigelow, George Hayward and Morrill Wyman; while S. L. Abbott, B. E. Cotting, N. B. Shurtleff, Buckminster Brown, Lyman, Moreland, Oliver, Townsend, Gay, Derby and Francis Minot were among those admitted to the Society during the 1840-50 decade. With Bigelow, Warren, and Charles T. Jackson attending the meetings, and with the introduction of ether agitating the public, much valuable discussion must have taken place, but nowhere in the records of the Society does there appear any of that rancor and bitterness which characterized the ether controversy elsewhere. The roll abounds in famous Boston medical names: J. Mason War-

ren, J. C. White, C. D. Homans, R. M. Hodges, Samuel Cabot, Calvin Ellis, J. N. Borland, J. P. Reynolds are a few noted in the transactions of the Society. With the introduction of the epoch known in medicine as that of "aseptic surgery," and with the rise of bacteriology, the Society became the forum for many important discussions. From the lethargy which age and divided interests had produced in this Society, the strong positive mind of James C. White gathered the nucleus of the present organization. This was in 1880. White became its first president. Probably there is to-day no one semi-private Society in Boston, if anywhere in the country, which has upon its active roll so many teachers of medicine and leaders in medical thought and action as has the Boston Society for Medical Improvement. In April, 1876, the Improvement Society transferred its library, then amounting to 474 volumes, to the Boston Medical Library Association. The members of the Society were by the terms of the contract permitted to retain full ownership of their library and bookcases, and the right to take from the rooms their own books. They were to bind their own journals and insure their own collection. From 1848 to 1855 the Transactions of the Society had been published in the "American Journal of the Medical Sciences." In January, 1855, they were transferred to the "Boston Medical and Surgical Journal," in which they still appear.*

In 1894 the Society united with the Boston Society for Medical Observation. This latter Society had been founded in 1835 by John Ware and Henry I. Bowditch. It was composed at first of medical students, and as a student society it existed for two years when it was discontinued until 1846.

---

* "The Story of the Boston Society for Medical Improvement," by J. G. Mumford, M. D.; in "Boston Medical and Surgical Journal," March 14, 1901.

Then Bowditch and seven others* revived it under the same name. It was called a society of the younger men of the profession, and it had a creditable existence. The Boston Medical Library Association took its birth from this Society. As time went on the kindred interests and associations of the Medical Improvement Society and the Observation Society made a union of forces profitable and advantageous to both, and it was arranged to unite them, retaining the name of the older, The Boston Society for Medical Improvement. The Observation Society had for its object the reading of original papers. They tell how the criticism was so unsparing that at least one member resigned on account of his unwillingness to stand the fire. The Society was fashioned after the society of Paris bearing the same name,—that Society which had Louis for its President. The purpose sought by the Boston Observation Society was "to make its members good observers of disease, to collect and arrange accurately recorded facts in furtherance of the cause of medical science, and to publish from time to time the results of the examination of such facts."

* Charles E. Buckingham, George Derby, John D. Fisher, Samuel Kneeland, Jr., Fitch E. Oliver, William H. Thayer, and John B. Walker.

EMINENT ALUMNI.

JACOB BIGELOW.

A. B. 1806; A. M.; LL. D. 1857; M. D. University Pennsylvania 1810; Professor of Materia Medica 1815-1855.

CHAPTER XXVIII.

EMINENT ALUMNI.

I.

JACOB BIGELOW.

In the history of every University there must be found instances in which important teaching positions have not always been awarded to merit, and Harvard is no exception. Round pegs have sometimes been forced into square holes, but Jacob Bigelow seems born for the place which Harvard created for him. In the year 1815 he was elected to the Lectureship of Materia Medica and Botany. Here was a young man only twenty-eight years of age, without social distinction; with no inheritance other than a strong body and a fertile brain; with no friends other than his college chums, and these too young to help him; yet he had already won prominence by his successful competition in four successive years of the Boylston Prize contest, an achievement which necessity keenly stimulated and one which no doubt was the means of winning for him the friendship of James Jackson. Becoming his associate in the practice of medicine (1811), Bigelow was placed in the best atmosphere to develop those varied talents which in after years secured the respect of all cultivated men.

In 1812, recognizing the success of young Gorham in his popular lectures on Chemistry, Bigelow suggested to some friends the wisdom of such a course in Botany. This gave him a chance to utilize his early experience of country life and his studies of the nature and habits of plants. More impor-

tant still, it associated him with Professor Peck, of the Harvard Botanic Garden; it opened a correspondence with famous American and European botanists; it resulted in the publication of "Florula Bostoniensis" (1814), and made the author the obvious choice of the Harvard Corporation for the position of Lecturer on Botany and Materia Medica, first created for the growing Medical School. His success in this office designated him for the Rumford Professorship, to which he was appointed a year later (1816). Let us then learn something of this genius, upon whom Harvard College conferred a dual position, a circumstance unique in her long history.

Perhaps that was the most remarkable life in Harvard Medical Annals. Oliver Wendell Holmes said of Bigelow: "I do not believe that I wrong any of the distinguished physicians and surgeons I have known, either in this country or in Europe, when I say that I think he had the most capacious and best-furnished, many chambered brain of all the medical men I have known. Others may have excelled him in this or in that particular, but he touched more subjects in literature, science, practical life, art; and not only adorned but improved more that he dwelt with, than any other member of the profession I have been personally acquainted with."*

Jacob Bigelow was born in that part of Watertown which is now Waltham, on February 27, 1787. His American ancestry goes back to John and Mary (Warren) Bigelow, who were married at Watertown in 1642, when they allowed an English legacy to lapse on account of John Bigelow's refusal to return to England. Our young Bigelow lived at the old homestead until the age of thirteen, spending five or six months of the year at such schooling as the neighborhood afforded. The rest of the year was occupied with minor duties

* Remarks at a meeting of Massachusetts Historical Society, February, 1879. Mass. Hist. Proceedings, vol. XVII, p. 41.

about the farm, and "wasting my time in roving about the woods, puzzling myself with speculations on natural objects, and taking intense delight in the construction of miniature saw-mills, machinery for entrapping rats and squirrels, and rude attempts at drawing and carving." How much of his future success came from these simple joys we will see presently. In his brief, modest autobiography he alludes feelingly to the high degree of cultivation possessed by his mother, and how he anticipated difficulty in procuring a college education from the meagre resources of his father's income as minister of the parish. His father, Jacob Bigelow, Sr., was graduated at Harvard College in 1766, and ordained minister of Sudbury in 1772.

Custom and tradition procured for the son a course at Harvard, notwithstanding the father's poverty, the depressed state of the College after the trials and losses of the Revolutionary War, and the heated religious controversy then being waged between orthodox and liberal schools. During his college life Bigelow showed that catholicity of spirit which marked his future career, for we find him enrolled in all the societies and clubs then existing in Cambridge. He was the poet of his Commencement Day in 1806.

Then came the choice of a profession—Divinity, Law, Medicine. With Divinity he was already somewhat familiar both at home and at school. The dogmatism of the day repelled him. His refusal to pronounce the oration necessary to secure the Master's Degree from his Alma Mater indicates his attitude towards public speaking, while his natural aversion to medicine was inherently strong. However, he attended the lectures of the medical professors during his senior year at Cambridge, as was then the custom. Here he shared the fate which had befallen many students before and for years after. He came under the spell of that fluent and charming John Warren. "I thought I discovered that a physician might be fluent and accomplished, and serve his generation in other

ways than as a mere vehicle of pills and plasters. I began to think that if a man could obtain a foothold in a city, and diversify his calling with the additional function of a lecturer or professor, he might find his position agreeable and advantageous."

He decided to be a physician, and he aimed at the highest and best in medicine. By spending a year at Worcester in teaching a small class of boys. he earned money enough to go to Boston and matriculate (1808) in medicine at Harvard. At the same time he entered as a pupil the office of John Gorham. During this first year in Boston, Bigelow taught in the Latin School. This enabled him to pay his expenses without calling further on the resources of his parents, "already overburdened by the cost of my previous education." While occupying this position he acquired a sound knowledge of the Greek and Latin classics, verifying the truism that the best learning is gained through teaching.

In 1809 he went to Philadelphia, where he entered the University of Pennsylvania as a medical student under Rush, Wister, Physick, Barton and Coxe. Here he found greater opportunities for research and experiment than were offered at Boston. He became a private pupil of Barton, then the leading botanist of America. It was while at Philadelphia that he won the Boylston prize. The incident was so characteristic of the man that it is worth telling in his own words:

"Although a medical student in my second year, my presumption was excited to become a competitor for one of these premiums. Yet so great was my diffidence at the thought of presuming at a mark far beyond my reach, that I concealed my purpose from every one, and wrote a long essay on 'Cynanche maligna,' in winter time, in a cold chamber, being obliged to wear a glove on my right hand to preserve the flexibility of my fingers. At length, the work being completed, I sallied out in a dark evening, and left it at the door of Dr. Lemuel Hayward, chairman of the committee. Anxiously did I wait for days and weeks, expecting to see the success of some person announced in the newspapers. But at length appeared a notice from the committee, announcing no award, but

simply continuing the same subjects for another year. Mortified, but not exactly disappointed, I sent to reclaim my unworthy dissertation, and found within, on the envelope, 'Received Jan. 2, too late for examination.'

"Thus although my ambitious dream was not realized, yet I felt relieved rather than rebuked, for it at once occurred to me that I could now devote a whole year to perfecting my production, and offer it at the end of that time with a more reasonable prospect of success. This vision, however, was succeeded by a better one, to wit, that I might again offer the same dissertation as it was, and add to it another essay on one of the other subjects proposed by the committee, thus taking my chance for two premiums instead of one. A new dissertation was therefore undertaken on 'Phthisis Pulmonalis,' and, that the two might not appear to be written by the same individual, I procured the former essay to be copied in a different hand. . . . . In the following winter I received letters in Philadelphia informing me that each of my dissertations had been successful in carrying off its prize. This little event was of unspeakable value to me at the time. Literary prizes . . . . were at that day a novelty, and did not fail to entail upon the author a degree of éclat which, though small, was nevertheless far beyond his dessert, and more than cancelled any debt which the world might have incurred to me on the occasion. I am constrained to add that the small remittence of cash which followed this award was of far more consequence to me than the optional substitute of a gold medal, which I should have been unable to eat."

The Boylston Prize was won again in the two succeeding years by Bigelow. In the meantime (1810) he had obtained his degree in medicine. It is said that one of the inducements for going to Philadelphia was his wish for the highest degree in medicine, an M. D., which could not then be obtained at home.* He wrote this characteristic letter:

"Philadelphia, March 6, 1810.

"Dear Parents, As my friends Bemis and Channing leave this place tomorrow for Boston, I cannot let the opportunity of writing escape. I have been not a little engaged this month or two past in preparing for an examination (the last, I trust, to which I shall ever be subjected in the medical line) for a degree of M. D., that is to say, Doctor in Medicine. The medical lectures being concluded, our professors have set their mill a-going for manufacturing doctors. Happening to pass by the university

* M. B. was the degree granted by Harvard until the year 1811.

to-day, I got one foot entangled in the mill, and not being able to disengage myself, was drawn in and ground over for about an hour, and then came out Dr. Bigelow. I have now to wait only for the Commencement, which takes place the last of April, after which I flatter myself with the prospect of seeing home speedily. During the rest of the time I shall employ my time in attending the practice of the hospital, and looking round the city, which as yet I have seen very little of.

"I can now see no obstacle in the way to my coming and settling with Dr. Mosman and laying siege to *part* of the practice of Cedar Swamp and Dungy Hole. As the Doctor's wagon is pretty capacious, I think I might, with a little persuasion, induce him to allow me a seat at his left hand, besides learning me to make bullets, pills, and sleeve-buttons.

"Upon looking back for a few years, I cannot but consider myself as having been peculiarly fortunate thus far. After being three years out of college, two and a half of which I had kept school, and two of which, properly speaking, I had studied medicine, I found myself in possession of a certificate of license from the medical society, and also of two dissertations which, I learn, have been so fortunate as to obtain prizes. In this place I have obtained a degree after four months residence, a thing very uncommon, as most students spend two or three winters in the city before obtaining it.

"Should I ever be so successful as to obtain a competent establishment in business, it will afford me no small satisfaction to reward in part the kindness of my friends, and to contribute as far as is in my power to support and console the declining age of my parents. But as it would be improper to presume on future events, I can only at present asure you of my best wishes and unaltered affection.

"JACOB BIGELOW."

"Rev. Jacob Bigelow,
"Sudbury."

Following his determination to settle in a large town rather than in a narrower and less attractive region, he came to Boston, where acquaintances were few, and friends or connections unknown, other than his faithful and devoted brother, Henry, who "generously offered to guarantee my support for one year in Boston, if I should determine to make the experiment of the city." The memory of that brotherly kindness was perpetuated in the name of the future eminent surgeon, Henry Jacob Bigelow. Already assured of an entrée into the best medical circles by reason of his membership in the Massachu-

setts Medical Society, acquired in 1809, Bigelow soon gained access to the best among the social, professional, and literary groupings of the men of that day. This association, together with the business partnership formed (1811) with the newly elected Professor of the Theory and Practice, James Jackson, was the needed stimulus and outlet for his genius. As Ellis says, he was artificer, draughtsman, machinist, and inventor, with natural gifts for all. Any one of these qualities would have served him well had he directed his thoughts towards surgery rather than medicine. The student of psychogenesis will find material for speculation in the consideration of these qualities of the father showing themselves later to such a marked degree in the son.

We have already told how he came to be elected a Professor in Harvard College. Thirty years of age, a full professor in one department and a lecturer in another; the colleague of Warren, Jackson, Gorham and Channing; a correspondent of European wise men, and the author of the only lucid American work on botany; rapidly making new friends, and constantly extending his professional labors, we can safely call Jacob Bigelow a leader among Boston physicians, and a valuable addition to that group of great teachers who adorned our Alma Mater during the first half of the Nineteenth century.

Bigelow was a member of the Faculty until 1855. Besides his "Florula Bostoniensis," the second edition of which (1824) added to popular enthusiasm for and interest in the study of botany, he published the "American Medical Botany" in 1818. The art of lithography and photography was then unknown, but we find Bigelow devising a method of printing the colored illustrations which added greatly to his reputation for resourcefulness. When he wanted models and drawings to illustrate the Rumford lectures, he again called upon his inventive mind. He visited the glassblower, the clock maker, the type caster, the printer, the turner, the moulder, and the engraver. No

garret was too humble, no cellar too damp, no work shop too dusty or too noisy for this active, inquisitive, practical man. The information gleaned or the knowledge acquired was always returned with manifold interest to the good of his fellowmen. Few works have proved more useful than his "Elements of Technology, etc.," published in 1829. It is a veritable scientific encyclopaedia, as it is a dictionary authority for the word "technology" itself.

Naturally he supervised the construction and placing of a statue to Franklin, now standing before the City Hall, Boston. With keen foresight he suggested, urged and planned the execution of one of the greatest agencies for public health ever undertaken by a single man. Not only did the project of Mount Auburn Cemetery originate with Bigelow, but he planned the grounds, designed the gate, the chapel, the tower, and even the iron fence, and finished his labors by the selection, donation and placing of that granite sphinx, symbolizing by the lion a just, calm, and dignified self-reliance, and by woman, beauty and benignity. As a valued editor of the first "United States Pharmacopoeia," in 1820, we see his practical mind complete a scheme for simplifying our medical nomenclature, which has ever since remained intelligible.

In 1832, when other men were holding back, Bigelow, with Ware and Flint, visited New York in the cholera epidemic, amid scenes of devastation said to have been unparalleled in modern times, and worked for the relief of the victims, ready to suffer martyrdom, as the phrase then was, in order to prevent the scourge from reaching his neighbors and friends. So thoroughly was this mission performed, so minutely were his observations recorded, and the horror of the situation so vividly impressed upon the city authorities of Boston, that they did not dare to publish the whole report lest the community be further alarmed. If Jacob Bigelow never did any other service for his state and city he deserves well for this work.

In 1833 Bigelow went to Europe, and in a curious printed circular to his patients he gives some idea of the extent and range of his practice, for he mentions four physicians upon whom his patients were to depend during his five months' absence. With that his autobiography ends.

In 1835 Bigelow gave to the world, through the "Communications of the Massachusetts Medical Society," his striking views on "Self-limited Diseases." The time was opportune, the public mind was receptive. Unsound and unscientific doctrines were already attracting well-meaning but misguided seekers for better things. In one brief treatise a powerful mind forced the truth home to all who would listen. Heroic treatment, blood letting, polypharmacy, were no longer to hold sway. The young philosopher, who keenly extracted what was true from the medical lectures during his senior year at Cambridge, had now reached that age and position when men must regard his opinions, and they did. Perhaps no other treatise has ever had such an influence on medical practice. It is a simple lesson, the old *vis medicatrix naturae*. That was a radical doctrine to advocate, but Bigelow was convinced that it was the truth. He believed no channel of information too narrow, no season inopportune, no audience too commonplace nor too scientific, to be used for the promulgation of truth. With this reform his name must always be associated. Others quickly took up his teaching, and in the space of a few years we find the law firmly fixed.

In an address to the medical students in 1844 on "The Medical Profession and Quackery," Bigelow pointed out in a calm, dispassionate, uncontrovertible manner the errors of Homoeopathy, as well as the limitations and inexactness of much of medical science as then understood. The address invited attacks both from within and without the regular profession. Bigelow's opinions prevailed.

As President of the American Academy of Arts and Sci-

ences, as an active member in the National and State Medical Societies, as a lucid, frequent writer in scientific, literary and lay journals, Bigelow covered such a wide and varied domain that the review of his contributions would carry us beyond the limits of this sketch. There is one paper of his, however, which calls for special mention, namely, his address on the "Limits of Education," delivered at the dedication of a new hall for the Massachusetts Institute of Technology, on November 16, 1865. Thirteen years before this date, Bigelow had delivered an address on medical education which plainly pointed out for technical teaching the reforms which were subsequently inaugurated at Harvard (1872). In this prophetic address he shows the evils and shortcomings of the existing system, and wisely indicates the way to better things. The usefulness of didactic lectures; laboratory investigation and research; the grouping of students into small sections; and the line of demarcation between exact sciences and speculative sciences, are all defined in a way that seems very modern today. This proposition is published with his "Self-limited Diseases" in a little volume, together with many medical and general essays, under the title, "Nature in Disease, and Other Writings," 1854.

Then came his last great public address, Limits of Education. In his two previous reforms we see him combating the prejudice and apprehensions of those who saw in the removal of the dead to a place remote and alone, little less than a sacrilege; and in his "Self-limited Diseases" the fixed traditions of almost every writer of note and authority. All his learning, all his force of language, all his observations and deductions of nearly four-score years, were concentrated in one utilitarian revolution whereby education was to be made conducive "to the progress, the efficiency, the virtue, and the welfare of man." Nothing could have been more typical of the best Harvard spirit. Nothing could more clearly demonstrate her ideals that she trains men to individuality. No

quoted extracts could do justice to the broad, rich, luxuriant scholarly culture brought out in that memorable discussion. After a lapse of nearly half a century many of the principles sustained are the foundation, and often the whole superstructure, of modern educational principles and teaching. Let us fancy that venerable sage, too old to meet his antagonists upon the Academy floor where he had won so many victories, gathering them within his own parlors, and there defending the axioms he had so publicly expounded the year before. In summary: Bigelow's contention was "whether education is to be regarded as a privileged boon restricted to the few, or is to be offered freely to the many. If it is to be offered to the many, then there must be an extension of the terms and conditions which have entered into the definition of education, and assign the means and the honors of it only to those who had attained such learning as the mass of pupils cannot now acquire, and could not profitably use where there is such need of quite other kinds of knowledge and skill." There was no trace there of failing mental power; no voice from the past crying out against the neglect of the old. He was as modern, as progressive, as far ahead of his time, as when he first came into our story nearly three-quarters of a century before. Lecky dissented; Lyell, Huxley, Spencer and others agreed. Whether or not it was a case of *post hoc, propter hoc,* the elective system in higher educational curricula expanded broadly.

Many interesting things are told by Bigelow's biographer of the years following the old man's retirement from active professional life. In the closing five years, totally blind and bedridden, he retained a mind so serene, so happy, so resourceful, that every visitor came away with some new and valuable treasure from that intellectual store house. Who of us at the end of life would not be cheered by such a letter as this:

"Boston, Feb. 27, 1876.

"Dear Dr. Bigelow: We the undersigned, physicians of Boston and its vicinity, desire on this anniversary of your birthday to join with your intimate circle of friends, in respectful remembrance of the occasion.

"Though for many years prevented by your infirmity from meeting with us, we all remember you with pride as one of the ornaments of our profession, and as a leader of medical thought in New England for the last half century. Very many of us recollect you as a teacher and able instructor in the Medical School and at the Hospital. Those of us who, in past days, have met with you in professional life, still hold grateful memories of your unwavering courtesy and kindness to us personally, and your honorable deportment as Senior Consulting Physician.

"One and all of us, therefore, dear Dr. Bigelow, on this pleasant anniversary, wish to send to you our congratulations on the fact that, although deprived of sight and unable freely to move, you have not suffered much pain during your long confinement; that you still enjoy a free communion with friends, and that, while looking at past and present events with pleasure, you can still judge of them with the clear intellect of former days.

"That the remainder of your life may have the same peaceful accompaniments, so grateful not only to yourself, but to the many friends who watch around you in your more immediate family, is the sincere hope of

"Yours very faithfully."

Dr. Bigelow died on January 10th, 1879, nearly ninety-two years old.

JOSEPH LOVELL.

Joseph Lovell, the first Surgeon General of the United States Army, was born in Boston, on December 22nd, 1788. His grandfather Lovell was a leading member of the "Sons of Liberty," and was taken to Halifax as a hostage by the British in 1776, when they evacuated Boston. Upon his return the elder Lovell served in the Continental Congress, and was chairman of the Committee on Foreign Affairs. His son, James S. Lovell, married Deborah Gorham, "a noted Boston belle," and to this couple was born Joseph, the subject of this memoir.

After a preliminary education in the schools of Boston, Jo-

JOSEPH LOVELL.

A. B. 1807; A. M. (Hon.) 1818; M. D. 1811.

seph Lovell entered Harvard College and was graduated in 1807. He began immediately the study of medicine with Ingalls, in Boston, and in 1811 was graduated at the Harvard Medical School, a member of the first class which received the degree M. D. from Harvard.* He volunteered May 15th, 1812, as Surgeon in the 9th Infantry, and was put in charge of the general hospital at Burlington, Vermont, established for the troops moving towards the frontier in the War of 1812. The appointment of a physician not yet twenty-four years of age to such an important post indicates the state of the Medical Department of the Army at the beginning of hostilities. The experience of the Revolution had been forgotten; the greater number of those surgeons who had served in that war, men whose experience would now have been of value, were either dead or superannuated. There were no records of the medical officers preserved, and, with no executive head and no organization at hand, the Medical Department was in a bad way when the army assembled at Greenbush, New York in 1812. James Mann,§ of Massachusetts, who had just been appointed Hospital Surgeon to superintend the Medical Department for this Northern Army, thus describes the situation:

"The mere organization of hospitals was the least perplexing part of duty. The illy defined powers with which the hospital surgeons were invested, even in their own department, subjected them to many disagreeable interferences of the officers of the line. Collisions will always exist between officers of different departments of an army, when their several powers and duties are not explicitly pointed out. Officers tenaceous of authority, assume as much as may be implied by rules and regulations. In addition to multiplied embarrassments, the various duties attached to the office of hospital surgeon with those merely professional, was always so pressing, that little time was allowed to record particularly the diseases and medical transactions of the army, as they occurred."

---

* Prior to 1811 the degree given was M. B.

§ Graduated A. B. Harvard, 1776.

Young Lovell showed executive ability from the start; his hospital became known as the model hospital; his capacity soon attracted the attention of General Wilkinson, and later in the northern frontier campaign secured for Lovell the endorsement of Generals Scott and Brown. A report on the Burlington Hospital says: "The following regulations were adopted in the General Hospital at Burlington, where in no instance from its first establishment, even when monthly reports counted from six to nine hundred men, was an infectious disease generated or propagated." Among the regulations instituted by Lovell were: frequent washing of walls and floors, daily sanding of the floors, frequent and generous supply of fresh air to every room and ward; "no person was permitted to spit on the floors of the wards. Spit-boxes were furnished every bed, and filled with sand twice a day, sometimes oftener;" the soldiers suffering from infectious and contagious diseases were separated from the other sick, and surgical cases were not allowed in the some rooms with febrile cases; venereal and skin diseases were given a separate ward.

After the battle of Bridgewater* it was thought advisable to transfer eleven hundred patients from Buffalo to Williamsville, where a General Hospital was established with Lovell and two other surgeons in charge. Lovell had been made full Hospital Surgeon, June 30th, 1814. Mann wrote under date of February 14th, 1814, "Surgeons and Mates of regiments under existing discouragements have no inducements to continue long in service. Curiosity alone, will induce them to sacrifice the term of one year in service. This being gratified its exciting powers lose their effects."

In December, 1814, the duties of medical officers in the army were defined for the first time by a general order from the War office. Then came peace with its heterogeneous,

* July 25th, 1814.

"patch-work kind of" legislation, all of which was as detrimental to better discipline as it was to the health of the troops.

In 1817 Lovell, the chief medical officer of the Northern Department, addressed to Major General Brown a paper on the causes of disease in the army. This report dealt with the various questions of reorganization of the Medical Department; it was the basis of that change later, and marked Lovell as the surgeon best fitted to execute the plan. This reorganization is interesting; it reads as follows:

"By the reports received from the different posts, it appears the troops have been remarkably healthy during the past year; for the whole number of cases (2138) very nearly one half (1051) are slight accidents and transient complaints, which detain the soldier but a few days from duty; —193 from wounds;—and 55 venereal;—leaving but 838 of fevers and other important complaints.

"Of these 266 consist of the different kinds of inflammatory fever; as colds, pleurisy, &c.; which are the almost inevitable consequence of a cold and changeable climate, and which no *ordinary* care can prevent. As they must always be incident to the inhabitants of the Northern section of the Union, and particularly to the soldier, ought not the most efficient means be taken to enable him to obviate as far as possible, these injurious effects of climate, by the quantity and quality of his clothing?

"Next on the list to inflammations comes diarrhœa and its attendant dysentery (diarrhœa 246, dysentery 94). As these, particularly diarrhœa, were the pests of our army during the war, constituting with inflammation, nearly the only complaints; and as they appear to be the chief cause of disease even in peace, it must be a matter of the highest importance accurately to ascertain their cause; and the best means of removing them, or obviating their deleterious effects.

"It required but little ingenuity to surmise that bad food and worse water would produce more or less disturbance in a man's stomach and bowels; especially when he had been used to much better fare. It was therefore a very easy matter to account for all the diseases of the soldier by accusing the contractor of furnishing unhealthy provisions, and the water of containing deleterious ingredients. This mode of explaining the difficulty rendered police duty vastly easier to the officers of the line, and furnished the surgeon with a brief and satisfactory mode of accounting for the death of his patients. The consequence was that much time and some talent were wasted in talking and writing against contractors and lake water, which might have been better employed in

rendering the soldier comfortable, and protecting him against the inclemencies of the climate.

"For the fact is, that neither of these accusations were *in general* just. The provisions were not *commonly* bad; nor did experiment show any ingredients in the water, at all adequate to the effect supposed. Nor was it true, that the food or the water were *peculiarly* bad, whenever and wherever these complaints prevailed and proved most fatal. Nor is it believed, there is cause of complaint against the provisions furnished at present.

"It is moreover, exceedingly doubtful whether bad food alone *would* produce the effects that have been ascribed to it. For in prison and on shipboard, where the numbers are frequently confined for a length of time to far worse fare than is even pretended in these cases, complaints of this nature are by no means the general consequence; while many a prisoner and slave condemned to the hardest labour, have proved by experience how very soon the digestive organs will become accustomed to food of a much worse quality than contractors would dare to issue, or the soldier's senses permit him to receive; and that even the deleterious effects upon the constitution were very gradual, though aided by many contingents to which the soldier, in this country at least, is seldom exposed.

"It is by no means intended to assert, that bad food or coarse food badly cooked would not produce disease; much less that it would not peculiarly aggravate complaints of the stomach and bowels, or even act as an exciting cause of them. But it *is* meant to say, that this alone does not necessarily or even generally produce such complaints;—that the food of the soldier was not during the war, and certainly is not now, of a quality calculated to produce them;—that the prevalence of these complaints at any particular time bore no proportion to the good or bad quality of the provision; nor were those places, where they were almost always committing ravages, worse supplied in this respect, than any other and therefore—that we are to look to some other cause for the production of these military plagues.

"And this it is apprehended will be found to arise from an *undue exposure to cold and moisture*. For the recruit is immediately confined to his rations, and experiences no bad effect from the change. It is not until he begins to feel the want of dry and comfortable lodging and clothing, and to be exposed to the changes of weather without sufficient clothing or exercise, that he suffers from diseases of the lungs and bowels. It is not a fact that those stations which became famous as the graveyards of the army, were worse supplied with provisions or abounded with worse water than any others; while it is well known that at these places the soldier was peculiarly exposed to the above-mentioned noxious agents. It could not be owing to the state of the provisions or water

that these complaints were so destructive in the spring and fall, rather than in the summer and winter; but it must be attributed to the unwholesome combination of cold and moisture peculiar to the frontier at these seasons; and it must be from this exposure that even now in time of peace, these complaints continue at some posts to occupy so large a share in the sick reports.

"In proof of what is here advanced, we need only to refer to the mortality at Sackett's Harbor during nearly the whole war, and to the state of the army in that vicinity during the fall of 1813. In both cases it must have been the climate—the weather—that produced the mischief; as there is not the least ground for supposing there was anything peculiarly bad in the provisions or water at that particular time, and at that particular place.

"Besides it is well known that among the inhabitants of the Northern section of the State, the greater proportion are under the necessity of guarding themselves by great attention to clothing from the bad effects of the climate, in order to prevent or remove the very diseases in question; and every practicing physician depends almost entirely upon this circumstance for curing, and altogether for preventing complaints of this nature.

"In confirmation of what has been advanced it may also be added, that the only medicines which have any *permanent* effect upon these complaints are those which act upon the pores of the skin; and thus in some measure counteract the effects of cold and moisture; and these require every assistance from warm bathing, warm clothing, lodging, etc.; simply cleansing the stomach and bowels does very little towards removing the complaints when fully formed. A coarse diet indeed is injurious, but it is in consequence of debility induced by the disease itself. It aggravates but does not produce it; and of course change of diet will not cure it. And even in the state of convalescence, it is very common after a cold and rainy night when the sick are in tents, to find several who appeared fast recovering dead within twenty-four hours; and some even before the morning visit of the surgeon. And this was in a greater or less degree so constantly the consequence on the whole of this frontier, that after a stormy night, the attending surgeon could calculate very certainly upon finding some dead, and many very much reduced.

"If then we are to attribute not only the great waste of life during the war, but the majority of the complaints at present to the want of adequate means of guarding against the effects of climate, it ought most certainly to be represented to those whose province it is, to make such alterations and additions to the allowance of clothing as will be consistant with *true* economy, by being best calculated to remedy the evil. To this end no soldier in this Division, at least none north of Philadelphia, should be allowed to wear any other than a woolen shirt. This

point has been often insisted on by the surgeons of the army; and in confirmation of it, we need only refer to the number of those enjoying every comfort, who find it necessary *in order to avoid complaints of the lungs and bowels,* not only to wear flannel next the skin, but to follow the advice of Doctor Franklin in not taking it off until mid-summer and putting it on again the *next day.* A second article equally necessary to the end proposed is an *outer coat.* Indeed there are few citizens of any grade in this climate, who do not feel the necessity of this, and who do not at any rate provide for it or a substitute, though most generally comfortably housed at those times when the soldier is most exposed. And lastly the most important circumstance perhaps of all is to enable the soldier to keep his feet warm and dry by a liberal allowance of woolen socks and laced shoes, reaching at least to the ankle. Almost every one has at times felt the uncomfortable consequences of wet and cold long applied to the feet, and many know but too well their deleterious effects upon the constitution through the lungs and bowels; so that it is scarcely necessary to insist upon this point. In fact there can be little doubt that due attention to these things, and to such circumstances of the soldiers quarters as may tend to the same end, would materially lessen the number of sick at present, and be of most essential benefit in the event of war. It is well known how much attention was bestowed upon this subject by the British upon this frontier; so that their soldiers were even supplied with fur caps and socks and gloves in addition to the articles above recommended; and the consequence was that the complaints which destroyed the greater part of our army were scarcely known among them, though they were often near neighbors for months.

"The cases of rheumatism are few, for the troops are mostly young and healthy men; and this is a mode of inflammation which generally attacks those of debilitated constitution, or who are somewhat advanced in life. It renders many unfit for service, who but for this would be efficient men, and was at times very troublesome during the war. Very few if any diseases require greater attention to comfortable clothing and lodging than this; they are the ground requisites for preventing the complaint in those predisposed to it, and absolutely necessary to removing it when induced. The cases of intermittent fever have not been numerous except in the 5th Department and particularly at Detroit. This complaint always prevails more or less among the troops; and though it depends altogether upon local causes for its origin, much may be done to lessen the susceptibility of the system to it; and therefore wherever it occurs it becomes fully as important a part of the surgeon's duty to explain and recommend the means of preventing it, as to administer the remedies calculated to cure it. The whole number of cases reported is 164; of these 141 were in the 5th Department, and 120 at Detroit. How far this prevalence of the complaint is to be attributed to the effect

of climate, and how far to accidental or predisposing causes; or whether the last year has been in this respect peculiarly unhealthy, can of course be known only by the inquiries, observations and reports of the surgeons stationed there. But it is much to be regretted that one of the most important duties of an army surgeon, that of investigating the causes of diseases at the different posts in order to remove them when possible, or obviate their noxious effects when practicable, should not be required by our regulations; and of course not attended to by the surgeon. Nor has the order requiring every surgeon to keep a record of the cases under his care been attended to as its importance demands. A strict attention to these points would not only be of the greatest benefit in preventing disease, but necessarily render the surgeon better acquainted with the nature of the complaints that occur, and at the same time ensure a degree of industry and attention to duty which is suspected to be much required.

"As connected with this subject may be also mentioned the want of a proper system of Medical Police, and of due attention to existing regulations in relation to it. This is one of the most important duties of the Medical Staff, is most carefully attended to in other services; and can only be introduced into ours by long practice. Like many minute duties of officers of the line, particularly those connected with police and the interior economy of a camp, they are only to be gradually acquired; and so incorporated into the regular routine of duty as to be considered as indespensable as the mere prescription of medicine. An officer of the line may soon learn the duties of the field, and a surgeon be amply qualified for his profession, and both of them be worse than useless to an army. It is from a knowledge of minutiæ which depend neither upon General Regulations, nor specific orders, that the experienced officer and surgeon becomes so much superior to the undisciplined recruit. It is almost entirely in order to acquire this kind of knowledge, that a military establishment is kept up in time of peace, and it is an undoubted fact that in no department of the army is it so slowly acquired and therefore so deficient as the medical. How severely this was felt during a great part of the last war is too well and too publickly known to need comment.

"It is therefore suggested whether such alterations be not required in the regulations, as are calculated to produce a system of medical police, which will not only ensure attention to every point of duty at present, but also in case of war enable the newly appointed surgeon to learn what he ought to do, without the necessity of trusting to his own ingenuity and suggestions; and after all his industry finding himself disbanded just as he begins to understand the most important duties of his station. Not to mention the many serious disadvantages of being obliged to allow each to adopt his own imperfect system; or the waste

of time and men and money while he is making his experiments. For there can be little doubt that where one man has died from improper medical treatment, ten have been destroyed from want of a knowledge of the many duties peculiar to an army surgeon.

"To effect this purpose it should be made the duty of every surgeon and mate having the charge of a hospital, together with his quarterly report to the head-quarters of the division, to transmit an account of the local situation of his station, of the climate, the diseases most prevalent in the vicinity, and their probable causes, the state of the weather during the time reported with respect to temperature; wind, rain, etc.; to state at large the general symptoms of the complaints among the troops, as well as every peculiarity of disease; to investigate and as far as possible report their causes; the means employed to obviate them with the success; as well as the practice adopted and the result.

"To this end he should not only keep a prescription book containing a daily account of the symptoms and circumstances of each patient in every important case; the medicines prescribed and the result of his practice; but also one in which should be stated everything directed to the diet and regimen; as the quality and quantity of food allowed, the mode in which it is prepared, etc. By the former the mate or apothecary should prepare the medicines; and it would also be a correct voucher for their proper expenditure; and by the latter the steward deliver the allowance of hospital store, etc.; and this would be a voucher for what he had expended. The surgeon should also keep a diary of the weather; noting in it whatever may be supposed to produce or vary the forms of disease. By a reference to these, the surgeon in his quarterly reports, instead of a mere list of names usually made out by the steward, would be enabled to give such an account of the diseases that had occurred, their causes and his treatment, as would be the best possible criterion not only of his medical abilities, but also of his industry and attention to duty. And besides this, an abstract of these reports would soon enable the surgeon at head-quarters to furnish what is much wanted at present, and what can only be effectually supplied in this way, viz.: a system of medical police and army practice suited to the deseases incident to the troops at the several posts in the division; and at the same time of suggesting such means of preventing these complaints as the experience of the different surgeons may have found most beneficial, under different circumstances of time and place. It is in this way that the most useful practical works have been produced.

"In order to insure attention to these things and also to the manner in which the inferior but not less important offices of the hospital are performed, it is also proposed that the surgeon attached to the head-quarters of the division be made 'Inspector of Hospitals.' It has long been observed that none but one of the medical staff can be competent

to this duty. The Inspector General and commanding officer can only determine whether the hospital and its furniture appear neat and clean, and the surgeon make his regular visits. But in every thing relating to the duties peculiar to his station, the surgeon is at present left entirely to his own sense of propriety. He is the only officer who is not in some way or other responsible for the mode in which his various duties are performed, and strictly accountable for the public property entrusted to his care. To this cause is no doubt to be attributed the many complaints continually, and too often justly, made against the medical department, particularly in active service, both on account of neglect of duty and waste of property.

"In addition therefore to the duties assigned a Medical Director, the surgeon attached to the head-quarters of a division should be authorized to call for and receive from the respective surgeons and mates such returns and reports relative to the situation, climate, weather, etc., at the different posts, as may be calculated to ascertain the causes of disease, and the best practical means of preventing it. And also such an account of the symptoms in every important case, the remedies prescribed, and regimen observed as may be requisite to elucidate the nature of the prevailing complaints, and the most efficient mode of treating them.

"He should consolidate the quarterly reports; and make such remarks and suggest such improvements both in practice and police, as may appear to be required for the benefit and comfort of the sick. He should from time to time inspect the hospital; *examine the books and accounts of the steward and wardmaster;* enquire into the manner in which every duty is performed; and see that all the regulations, both professional and those relating to police are properly attended to; by a strict examination of the prescription book, judge of the medical abilities of the attending surgeon, and ascertain that there has been a proper expenditure of medicine; from the diet book which should contain the quantity and quality of the food and liquor daily allowed to each patient, see *that there has been a proper application of the hospital stores;* and make such communications to the Apothecary General on the subject as may appear necessary and proper. And finally from his own observations, and from the reports and the accompanying remarks of the surgeon, to form a manual of medical police and practice suited to the circumstances of the soldier; and to make such reports to the commanding general of the medical abilities, industry, fidelity, etc., of the respective surgeons, as his information from all these sources might warrant.

"Were some plan of this nature adopted, and the above-mentioned duties faithfully attended to, it is believed the good effects would soon be apparent; and that they would be as permanent as they were obvious.

"Joseph Lovell,
"*Hospital Surgeon, U. S. Army.*"

Congress spent a great part of the session of 1817-18 in discussing the provisions of a Bill for regulating the General Staff of the Army. This bill was passed finally, May 14, 1818. Section II reads *"And be it further enacted,* That there shall be one Surgeon General with a salary of two thousand five hundred dollars per annum, one assistant surgeon general with the emoluments of a hospital surgeon * * * and that the number of post surgeons be increased not to exceed eight to each division."

For the position of Surgeon General thus created, Joseph Lovell was selected, his appointment being dated April 18th, 1818. He was not then thirty years old, but "the ability he had shown in charge of the general hospital at Burlington, and when serving with Generals Scott and Brown on the northern frontier, and his appreciation of the wants of the army, evinced by his able reports on various subjects connected therewith, designated him as the fittest person to assume the organization of the new department, and his appointment gave great satisfaction both to the army at large and to the Medical Staff."* Surgeon General Lovell immediately set about his work, and the following order was issued by the War Department:

"Adjutant and Inspector General's Office,
"General Orders. April 21, 1818.

"All reports, returns and communications connected with the Medical Department will hereafter be made to the Surgeon General's Office at Washington.

"All orders and instructions relative to the duties of the several officers of the Medical Staff, will be issued through the Surgeon General, who will be obeyed and respected accordingly.

"The Assistant Surgeons General will forthwith commence the inspection of the Medical Department in their respective divisions agreeable to the instructions they may receive from the Surgeon General.

"By order "D. PARKER
"Adjutant and Inspector General."

---

* "The Medical Department of the United States Army," 1775-1873, by Harvey E. Brown, Assistant Surgeon, U. S. Army.

The revision of the Medical Regulations was the first subject undertaken by the new Surgeon General. In carrying out this revision, Lovell determined to incorporate the views expressed in his letter to General Jacob Brown. These regulations have since served as the model for all changes made in our army regulations. The system of placing responsibility upon the individual surgeon for the property of the government intrusted to his care was the principal reason for the reduction of the per capita appropriation from $7 per annum to $3 for each man in the service.

In 1818 Lovell made a report to Congress, and in it he urged many recommendations for the further improvement of the Medical Department. This he did at the request of J. C. Calhoun, then Secretary of War. In consequence of further urging by Lovell, Congress passed an Act, May 8th, 1820, in which the Apothecary General and his assistant were required to give bonds to the United States for the faithful performance of their duties. These duties had in part been performed by the Commissary General of Purchases, and had been the object of severe criticism.

An Act of Congress reducing the size of the army was passed March 2, 1821. In the reorganization which ensued, the Medical Department fared badly. Lovell made many efforts to raise the medical standard by instituting examinations for all applicants for appointments as assistant surgeons. He also tried to have the emoluments for the different grades increased and graduated. Nothing resulted from these efforts until June, 1834, when a bill "Increasing and regulating the pay of the Surgeons and Assistant Surgeons of the Army" was passed. The correction of the abuses and deficiencies in the old organization was necessarily slow, but Lovell kept memorializing the Congress, and his quarterly reports never failed to express strongly the necessity for further changes. The medical officers found in him a sincere and persistent

advocate of justice in the increased duties which the changing conditions brought with them. In the discussion in Congress, during 1829 and 1830, upon the reduction of expenses of the army, Lovell not only protested against any reduction of the number of medical officers, but advocated an increase in their number. Here is his letter upon the subject:

"Surgeon General's Office,
9 January, 1830.

"Hon. J. H. Eaton,
"Secretary of War:

"Sir: In reply to your letter of the seventh inst., enclosing the copy of a resolution of the Committee on Retrenchments, I beg leave to state that any reduction of the number or compensation of the surgeons and assistant surgeons of the army is deemed inexpedient, as the necessity of an increase of their number, and the equity of an increase of their compensation, has been fully stated in reports heretofore made to the Department; and it is understood that a bill for these purposes has been recently reported to the House of Representatives. . . ."

Six months later Lovell sent a second communication to the Secretary of War, showing "that notwithstanding a very considerable increase in the number of military posts and stations, the number of medical officers is less than it has been at any period within the last ten years." A long investigation resulted in the Secretary of War reporting that "The Surgeon General of the Army might be dispensed with," and making further recommendations, which Lovell was able to demonstrate in a rejoinder were all founded upon wrong information or upon inaccurate data. As a result of this statement by Lovell, the Military Committee of the House decided that the circumstances demanded an *increase* rather than a reduction of the Medical Staff. This resulted in the passage, June 28th, 1832, of an Act, "That the President be, and he is hereby authorized by and with the advice and consent of the Senate, to appoint four additional surgeons and ten additional surgeon's mates in the army of the United States."

In the Black Hawk war, or "Cholera campaign," as that

affair came to be called, the demand for surgeons proved the wisdom of Lovell's course, and in response to his appeal Congress passed an Act (July 4th, 1836) adding three surgeons and five assistant surgeons to the roster of the Medical Staff of the Army.

One of the last official acts of Surgeon General Lovell was to submit a report on June 4th, 1836, in which he pointed out the necessity for an increase in the Medical Corps. The exacting duties of his office had already affected seriously his constitution, and he survived the death of his wife but a short time. He died October 17th, 1836. The "National Intelligencer" of Washington said of him: "It rarely falls to our lot to record the death of one whose loss to the community and the profession, both military and civil, of which he was a distinguished member, is so deeply and widely spread as the untimely exit of Doctor Joseph Lovell, late Surgeon General of the Army." Brown says of him: "The greatness of the loss to the army, and especially to the corps which he may almost be said to have brought into being, can hardly be exaggerated. Throughout his official career he had gained the universal respect, admiration and affection of all with whom he was associated. His predominant characteristics were a strong sense of the dignity of his position and of the profession to which he belonged, and a gentleness of demeanor in all his relations both official and personal with the subordinate officers of the Medical Staff. * * * In his correspondence with the officers of his Department, no one could be more gentle and even tender; * * * his good service extended to every branch and department of the army. It was through his efforts that the whiskey ration was finally abolished; by his representations that Congress passed the bill by which obnoxious officers were weeded out through the agency of a board of examination; that the rations and the clothing of the soldiers were improved, post hospitals built on

a rational principle, and officers held to a strict accountability for their treatment of the sick and the expenditure of supplies. In all his relations, whether as Christian philanthropist, profound scholar, skilful surgeon, experienced officer or true-hearted gentleman, he was one of whom the Medical Staff may always be proud and the memory of whose good life is written on every page of its history."

In 1842 the officers of the Medical Corps testified their appreciation of his services by the erection of a handsome monument over his grave in the Congressional Cemetery at Washington.

WALTER CHANNING.

Walter Channing was born in Newport, Rhode Island. April 15th, 1786. He was a brother of the famous William Ellery Channing, and of Professor Edward T. Channing.*

Walter Channing entered Harvard College in 1804. During his junior year he was concerned in the Students' Rebellion, and had to leave college. He received his A. B. in 1867. He studied medicine in Boston, Philadelphia, Edinburgh and London; and in the last two places paid special attention to Obstetrics. His M. D. (ad eun.) was received from Harvard in 1812. He was M. D. of the University of Pennsylvania in 1809. Upon his return to this country, Channing began the practice of medicine in Boston. This was in 1812, and on May 10th, 1815, he was elected Lecturer in Midwifery, entering the Medical Faculty with Jacob Bigelow, at the same meeting at which John C. Warren was appointed to succeed his father as Professor of Anatomy and Surgery. Channing's lectureship was made a full Professorship of Obstetrics

* William Ellery Channing, A. B., 1798, A. M., 1802; S. T. D., 1820. Fellow, Dexter Lecturer.

Edward T. Channing, LL. D., 1847; Boylston Professor Rhetoric and Elocution, Harvard, 1819-1851.

and Medical Jurisprudence three years later, and was held by him until 1854. He was Dean of the Medical School from 1819 to 1847. In 1821 he became assistant to James Jackson as visiting physician to the Massachusetts General Hospital. He served twenty years on the staff of that hospital. When the Boston Lying-in Hospital was founded (1832) Channing, with Storer and Charles G. Putnam, were the physicians to whom its care was entrusted.

When Channing entered practice, midwifery was in a low state of development compared with what we now see it, but he had the best knowledge then obtainable abroad, and so became very valuable to American obstetrics. On account of his special training, as well as from his personal charm, he was soon a great favorite both professionally and socially. He had a mind brilliant, apt, forceful and discursive. This last quality was a not infrequent cause of an underestimation of his power of concentration. New things appealed forcibly to him. He was a true Bostonian; one of those men for whom some have called Boston the "Modern Athens."

Channing had a native wit which added to his success as a teacher. He was extremely popular with younger physicians, to whom he was always loyal and helpful. In public affairs he was active, and there were few local movements of philanthropy, of reform, and of educational and social progress inaugurated during his active life that do not bear witness to his zeal and enthusiasm. His best known publications were "Etherization in Childbirth," "Reform in Medical Science," and his addresses on "Prevention of Pauperism," and on the necessity for introducing pure water into Boston.

When the "New England Medical Journal" was started, Channing was one of its supporters. He was one of the committee of five (Jackson, Channing, Bigelow, Gorham and Warren) who collected and edited the various articles. This publication was a great aid to the medical school, as well as

a valuable vehicle for the conveyance of medical knowledge to the profession. The editorship finally passed into the hands of Channing and John Ware. These two were its sole editors at the time of its expansion (1828) into the "Boston Medical and Surgical Journal." Channing furnished the reports of medical cases at the Massachusetts General Hospital and at the Boston Lying-in Hospital. In the Massachusetts Medical Society, Channing was Librarian from 1822 to 1825, and Treasurer 1828-1840. He gave the address of 1833, his subject being "Irritable Uterus." He also read an article on "Cases of inflammation of the veins with remarks on the supposed identity of phlebitis and phlegmasia dolens," before the Society. He was a member of the American Academy of Arts and Sciences. He died in Brookline, Massachusetts, July 27th, 1876, at the age of ninety.

JOHN WARE.

John Ware was born at Hingham, Massachusetts, December 18, 1795. His father was a minister there, and afterwards Hollis Professor of Theology at Harvard. John Ware entered Harvard when barely thirteen years old, and was graduated A. B. in 1813. He began the study of medicine with John Gorham, and had as a fellow student John Homans (A. B. 1812). Ware took his medical degree also at Harvard in 1816, and immediately entered upon practice at Duxbury, Massachusetts. Later he moved to Boston, where he practiced until his death. When James Jackson asked the Corporation to give him an assistant in his duties as Hersey Professor of Theory and Practice of Physic, they established the position of Adjunct Professor in his department, and elected Ware to it, January 19, 1832. Upon the resignation of Jackson in 1836, Ware was elected (June 16, 1836) to the professorship. He held it until July 31, 1858.

During this stewardship, Ware won the love, confidence and esteem of the community. Beginning life under hard circumstances, and forced for many years to struggle for a start, he finally succeeded in building up a great reputation and a great practice. He became a writer and a teacher, and was a laborious practitioner. In 1828 he became editor of the "Boston Medical and Surgical Journal," and for some time, with Channing, conducted the journal. Both men had previously been associated with Warren, Gorham, Bigelow, Jackson, and Hayward in the "New England Medical Journal," and it was this connection no doubt which led to his selection as Jackson's assistant and successor in the Medical School. Ware's connection with the founding of the "Boston Medical and Surgical Journal" is told by himself:

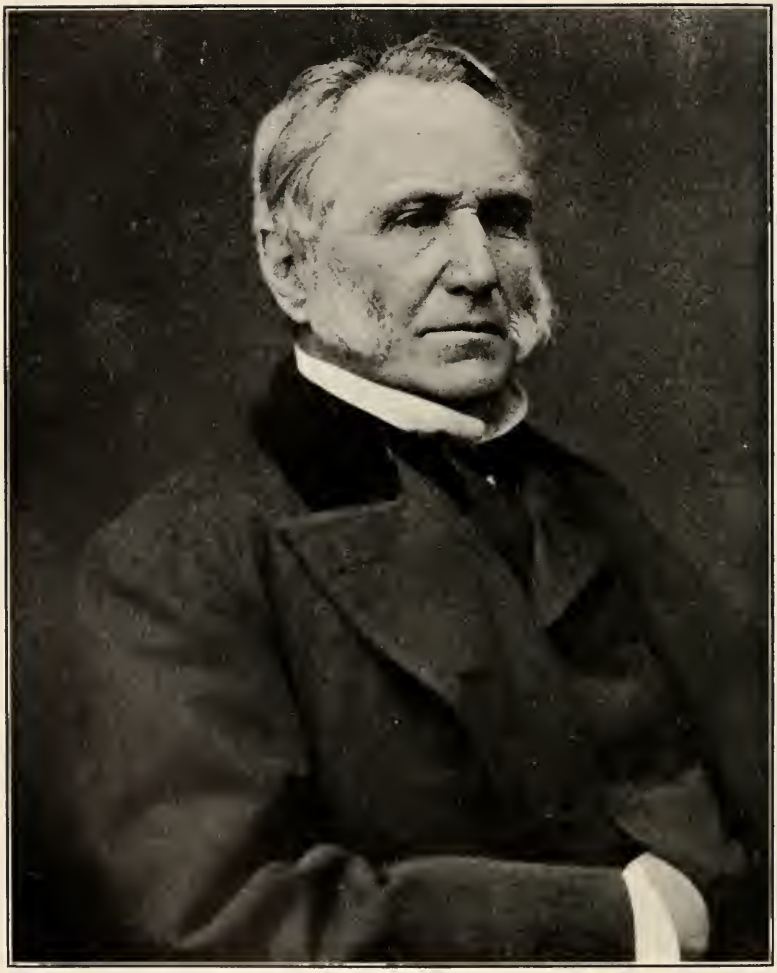
"In 1824 the editorship of the 'New England Journal' passed into the hands of Dr. Channing and myself. The subscription was small, and the work hardly paid its way. We thought of giving it up in 1827, but the plan was then suggested of uniting its list with the 'Medical Intelligencer,' then conducted by Dr. John G. Coffin. Dr. John C. Warren united with us in purchasing that journal; and the 'Boston Medical and Surgical Journal' was begun under our joint charge. I forget how long we continued it, but we found it not only laborious, but a losing concern, and we disposed of the whole to Mr. Cotton. I could not at the time assume any pecuniary risk, and Dr. Warren accordingly took two-thirds of it; and, as an offset, I performed the quarter part of his labor in getting up the number; i. e., of the mechanical part, which it fell to his share to edit."

Ware's name is frequently found as a contributor in the files of the journal. His articles on "Croup," "Delirium Tremens" and "Hemoptysis," and his volume on the "Philosophy of Natural History," were his most important work besides his public lectures. He had industry, and by his zeal accumulated a fund of medical knowledge which he communicated to others in a way to impress them. In his method he was given neither to the assumption of skill nor to claims of infallibility. He illustrated impartial reasoning, clear perception,

just inference, and an honest regard for the opinions of others. He was frank and humble, but with a strong self-reliance which gave him great advantage in his dealings with patients. He was a disciple of the expectant school: "watch and guard, but do not thwart the restorative influence inherent in the unmolested constitution," was his constant advice. To this he added the influence of a strong personality. Pleasant, amiable, with a generous, kind word for all; attentive, never impatient; always cheerful, both in language and manner, it is not surprising to have his contemporaries say of him: "John Ware's name was in itself a guarantee of excellence, but his personal merits would have commended him to the confidence of any community where he might have appeared as a stranger. Very gentle, very amiable, very conscientious, his natural modesty kept him from challenging public attention as emphatically as his ability and knowledge might have entitled him to do."

At a meeting of the Corporation of Harvard, August 28, 1858, Professor John Ware resigned, and it was voted, "that in accepting the resignation of Professor Ware this Board cannot refrain from expressing their regret at the serious loss which the Medical School incurs in this event." It was further voted, "That the President in communicating this vote to Dr. Ware be requested to signify to him the sense entertained by this Board of the great value of his services to the University for the twenty-six years during which he has been connected with it, resulting as well from the soundness of his judgment and the excellence and weight of his character, as from his learning and professional eminence."

Ware had been visiting physician to the Massachusetts General Hospital for many years, and was a member of the American Academy of Arts and Sciences. He was president of the Massachusetts Medical Society from 1848-1852, and delivered the annual discourse in 1847; it was entitled "Condi-



Willard Parker.

A. B. 1826; A. M.; M. D. 1830.

tion and Prospects of the Medical Profession." John Ware died in Boston, April 29, 1864.

"As a consulting Physician in cases of great responsibility or difficulty his professional brethren have so long enjoyed his wise counsel that they hardly know how to spare him. He was endeared to all by the gentleness and kindliness of his manner, by his hearty interest in the welfare of the sick, and by his ever fresh and ready intelligence. The profession in this city have never lost one of its number who has filled up a larger measure of honorable devotion to the highest interests of humanity."

WILLARD PARKER.

Willard Parker was born at Hillsborough, New Hampshire, September 2, 1800. From an ancestry of English Puritan stock, Parker inherited a strong physical constitution, as well as sound mental capacity for the laborious and useful life that lay before him. When he was five years old his family moved to Chelmsford (now Lowell) Massachusetts, and there the lad worked on his father's farm until he was nineteen. During the latter years of this period he taught a district school and so earned the money to take him to Harvard. He was graduated A. B. in 1826. It was the wish of his parents and of himself that he should enter the ministry. However, fate decided otherwise. The story reminds one of Nathan Smith's awakening. While Parker was in his freshman year, his chum was brought low by a strangulated hernia, which the efforts of a neighboring physician failed to reduce. John C. Warren was sent for, and his diagnosis, as well as the facility with which he reduced the obstruction, so impressed young Parker that he resolved to devote his life to the study and practice of medicine. His first advantage was in obtaining (1827) the position of House Physician at the United States Marine Hospital in Chelsea, Massachusetts. There he served for two years under S. D. Townsend. Later he was a pupil of John C. Warren, and upon the creation of the office he

was appointed (February 26, 1829) house-pupil at the Massachusetts General Hospital, having secured his medical degree from Harvard meantime. He was graduated M. D. in February, 1830.

Though Parker was not yet thirty years of age he had already established a reputation as a lecturer. Accordingly, he was invited in the summer of 1829, a year before his graduation, to deliver a course of lectures on anatomy in the Medical School at Woodstock, Vermont. This he did in the winter following, and was appointed Professor of Anatomy in the Vermont Medical College. In 1830 he was also elected to the Professorship of Anatomy at the Berkshire Medical Institution. He lectured twice daily at Berkshire, and in 1833 the chair of Surgery was added to his previous appointment. In 1836 he was offered the Professorship in Surgery at the Cincinnati Medical College. There he taught for one term, and then went to Europe for study in London and Paris.

Upon returning to America, Parker was given the chair of Clinical Surgery in the College of Physicians and Surgeons in New York, where he worked for the next thirty years of his life (1839-1869). His work and his accomplishments were brilliant and unusual. His rise in his profession seemed instantaneous and complete. He was immediately recognized as a teacher and surgeon of a high order, and his bold operations and distinguished talents soon placed him in the foremost rank. He was a man of high character and broad public spirit.

Parker's far-seeing mind appreciated early the deficiencies in the method then employed for teaching surgery, and upon his acceptance of the Professorship of Clinical Surgery he set about making better use of the opportunities offered in a large city. Not having a hospital service, he visited daily with his students the two city dispensaries, and gradually succeeded

in obtaining material sufficient for demonstration before the class at the Medical College, then located in Crosby Street. The anatomical rooms were utilized for the teaching of clinical diagnosis, and later for the performance of operations illustrating the cases from the dispensaries. Thus grew up a method of holding those "Clinics" which are now a factor in medical education. Such work stamped Parker as a resourceful teacher.

In 1845 Parker became associated with James R. Wood in reorganizing the city Alms House, and developing it into Bellevue Hospital, under a board of governors. Parker and Wood were made the visiting physicians. He was also one of the founders of the Academy of Medicine, and was its president. The Health Department of the city was notoriously inefficient, and this inefficiency the Academy of Medicine set out to correct. Under Parker's initiative they brought about the formation of a Board of Health. Long afterwards a tribute to its founders was thus expressed: "This board has inspired most of the legislation upon hygiene, reforming our building laws, giving us improved sewerage, checking the adulteration of food; demonstrated the necessity of pure water, and proper ventillation in all parts of our dwellings; it has fought manfully for the preservation of our public parks, the lungs of the city; it has stimulated tree planting, and aided in beautifying the city in a variety of ways."

In 1856 Parker was appointed Surgeon to the New York Hospital. In 1865 he was appointed successor to Valentine Mott as president of the State Inebriate Asylum at Binghamton, the first establishment ever founded for the treatment of drunkenness as a disease.

Princeton College conferred upon him the LL.D in 1870, at a time when he was Consulting Surgeon to the New York Hospital, Bellevue Hospital, St. Lukes' Hospital, Roosevelt Hospital, Mt. Sinai Hospital, and *Emeritus* Professor of Sur-

gery at the College of Physicians and Surgeons. In addition, he had been Professor of Anatomy at Geneva College, and Professor of Anatomy and Surgery at Colby University.

During this active career Parker contributed a great deal to the advancement of surgical science. He was the first to suggest the condition which is known as "concussion of the nerves," as distinguished from concussion of the nerve centers—a state previously mistaken for an inflammation; he introduced cystostomy for the relief of chronic cystitis; he was one of the first to operate for appendicitis, as we recognize it to-day; he introduced the division of the sphincter of the rectum near the coccygeal attachments, and the widening of the denuded surface in the operation for repair of lacerated perineum. As a teacher Parker had a high reputation. With a fine personal presence and a rare courtesy, he won the regard of his pupils. By his direct and lucid manner he made each step of an operation plain; and he constantly impressed upon his students, both by his own methods and by his discourse upon the practice of others, the value of simplicity and common sense in operating and in general treatment. His countenance was characterized by a freshness and vigor which showed in his every action the possession and advantages of a sound physique.

The Willard Parker Hospital in New York was erected and named in honor of this man who did so much for medical education. He died in New York on April 25, 1884.

EMINENT ALUMNI

(CONTINUED)

CHAPTER XXIX.

EMINENT ALUMNI (CONTINUED).

SAMUEL GUDLEY HOWE.

Samuel Gudley Howe used to be called "the apostle of freedom", for he was a volunteer in the Greek War for Independence, where he served honorably; he was a notable member of the Massachusetts State Board of Charities, and he is best known for his service to the blind, in rescuing them from the ignorance and pauperism which most people thought to be the inevitable result of their infirmity. He gave his services to the feeble-minded also; indeed, his work for humanity was very great, and doubtless his was one of the most useful, most romantic, and most eminent careers among the many notable careers of Harvard graduates.

He was born November 10, 1801, in Boston. His father, Joseph N. Howe, was a ship owner, and a manufacturer of ropes and cordage, which he furnished in large quantities, mostly on credit, to the United States government during the war of 1812. His mother, a woman of great beauty, was a relative of the engineer intrusted with the fortification of Bunker Hill.

During his course at the Boston Latin School Howe showed traits of character which later years strengthened and completed. The family savings having been very much reduced through failure of the Federal government to make good its indebtedness to the rope maker, it was decided that whichever one of the sons could best read aloud passages from the family Bible should have a college education. This prize Samuel won,

and entered Brown University in 1818. There he showed a keen, active, speculative mind, and a great passion for practical jokes. He was graduated from Brown in 1821, the same year, be it noted, that saw the Turk swept out of the Peloponnesus, and a Greek state established. Returning from college to Boston, Howe studied medicine with Jacob Bigelow, John C. Warren, Parkman, and Ingalls, and in 1824 received the M.D. degree from Harvard.

The Revolution in Greece was now well advanced; one hundred and fifty European ships had gathered at Alexandria to transport Ibrahim Pasha with his Arabs to do the work which had proved too much for the Sultan's own forces. Howe described later the campaign carried on by the cruel Egyptian: "He went about the Morea like a destroying spirit; and the smouldering villages, the blackened and scathed trunks of the olive trees, and the mutilated human bodies in all stages of putrefaction, marked the route he had taken from province to province."

Howe's impulses, at all times keen, had by this time become aroused into active sympathy for the Hellenes in their single-handed struggle against a wide-spread and powerful barbarism. The writings of Byron did much to shape into action the zeal of this young lover of freedom, and we find him forsaking the prospects of a good opening in his own country that he might carry his skill to the patriots of distant Greece. As one would suppose, he found little encouragement among his own people. He used to say that Gilbert Stuart, the famous painter, was the only friend of those days who bade him godspeed on his errand. Carrying a letter of introduction from Edward Everett to a Greek acquaintance, Howe sailed for the Mediterranean in the autumn of 1824. Landing at Malta, he immediately took passage for Napoli de Monembasia, whence he pushed on to the headquarters of the provincial government. His own account is as follows:

"In the winter the much-dreaded expedition of Ibrahim Pasha, with the Egyptian army, landed at Molai. Attempts were made by the Greek government to get up an army to oppose them, and Mavrocordato accepted my offer to go with them as surgeon. The President and Mavrocordato came to the south of Peloponnesus with such forces as they could raise. At first there was an attempt to organize the army, and I attempted to create hospitals and to organize ambulances for the wounded. But after the capture of Navarino by the Turks, everything was thrown into confusion. Mavrocordato fled to Napoli. The dark day of Greece had come. All regular opposition of the Greeks was overcome. The Turks advanced fiercely and rapidly up the Peloponnesus. I joined one of the small guerrilla bands that hung about the enemy, doing all the harm they could. I could be of little or no use as surgeon, and was expected to divide my attention between killing Turks, helping Greeks, and taking care of myself. I was naturally very handy, active and tough, and soon became equal to any of the mountain soldiery in capacity for endurance of fatigue, hunger, and watchfulness. I could carry my gun and heavy belt with yatagan and pistols all day long, clambering among the mountain passes, could eat sorrel and snails, or go without anything, and at night lie down on the ground with only my shaggy capot, and sleep like a log."

Later, writing to his friend Horace Mann he says:

"I have been months without eating other flesh than mountain snails or roasted wasps; weeks without bread, and days without a morsel of food of any kind. Woe to the stray donkey or goat that fell within our reach then; they were quickly slain and their flesh, cut up hastily into little square bits, was roasting on our ramrods, or devoured half raw."

If romance and adventure had been the motive of Howe's joining the Greek cause, surely he had his share. In his case, however, the motive was deeper—the fight he had entered was the fight of humanity, which then and ever after found in him a devoted friend. An event connected with these years is described by Whittier in "The Hero." Here it is as Howe tells it:

"I was by chance at Calamata after escaping from Navarino, when a sudden invasion of the Turks forced everyone to fly who could fly. I never shall forget the dreadful scene of confusion and distress, or my feelings, as I galloped through the town, accompanied by Ernest, a

gallant young Swiss, for we passed many poor beings, old or sick, who were unable to fly on foot, and who stretched out their hands praying for God's sake that we would save them; but selfishness and the pressing danger made us turn a deaf ear, and think only of saving our own lives. We had left the town and were hurrying across the plain, which was occupied with fugitives, when I beheld a wounded soldier sitting at the foot of an olive tree, pale, exhausted, and almost fainting, but still grasping his long gun as if he meant to have a last shot at the expected foe; it was Francesco, who had been dreadfully wounded a few days before, and had staggered thus far from the temporary hospital at Calamata, on hearing the alarm. The poor fellow cast a supplicating look at us as we passed, but said not a word. That look cut me to the soul; had he presented his gun and demanded my horse, it would not have so moved me; I could not but turn my head after we passed him, and, seeing him still looking after us, as I thought reproachfully, I pulled up my horse, and, on calculating the distance, found I had time to gain the mountains; of course I turned back, mounted the poor fellow on my beast, and thus easily reaped the rich reward of his gratitude."

"Smile not, fair unbeliever,
One man, at least, I know,
Who might wear the crest of Bayard
Or Sidney's plume of snow.
* * * * * * *
Wouldst know him now? Behold him,
The Cadmus of the blind,
Giving the dumb lip-language,
The idiot clay a mind."*

After a time Howe left the land service and became titular "surgeon-in-chief of the Greek fleet." Here he was associated with George Finlay, the historian of Greece.

On the 30th of August, 1827, the Grand Vizier declared to the ambassadors of England, France and Russia: "My positive, absolute, definite, unchangeable, eternal answer is that the Sublime Porte does not accept any proposition concerning the Greeks, and will persist in his own will forever and forever, even unto the day of the last judgment." Howe knew what this meant to a people already reduced to starvation, but

* Whittier.

he waited long enough to witness the allied fleets enter the Bay of Navarino and in four hours destroy the Egyptian armada; then he sailed for home to champion the Greek cause before his countrymen, and to secure material relief for the sufferers. The result of this visit was more than sixty thousand dollars in money, besides a large quantity of clothing. The money was invested in food, and the supplies he himself distributed on his return to Greece. Finlay says that the relief thus given saved a large part of the Greek people from perishing.

Such works of mercy were not without their dangers, and it required all Howe's courage and astuteness to outwit the warring chiefs. Thus, at Nauplia, where Gravis was intrenched on impregnable Palamedi, and Colocotroni held the fort below in a state of civil war, Howe bearded them both, and when an armed force actually seized his magazine, he parleyed and played off one against the other until our good old "Constitution" (which he had meantime summoned from Spetsia) came ploughing up the gulf to back up our hero. Howe also found employment for thousands of refugees, and established and maintained a colony on the isthmus of Corinth.

At the close of the war, Howe returned to Boston, where he was induced soon after by John D. Fisher, a graduate of the Harvard Medical School in the class of 1825, to return to Europe for the purpose of visiting the schools for the blind in France and Germany, and to study the methods of educating the blind as established by Valentin Haüy. He reached Paris in time to take part in the Revolution which placed Louis Philippe on the throne. At the request of Lafayette, Howe undertook the delivery of supplies of money and clothing sent from America for the people of Poland, then fighting Russia. Having performed successfully this hazardous task he proceeded to Berlin for his studies. On the night of his arrival

there, he was arrested for his connection with the Poland mission. Five weeks of imprisonment he employed to good advantage. Obtaining possession of some German works on educating the blind,—books he had never heard of in Paris,—he set about translating them. Years afterwards the King of Prussia gave him a gold medal for his success in teaching Laura Bridgman. Howe had the curiosity to weigh the medal, and found its value to be exactly the sum which his prison fare had cost him in 1832.

Returning from Berlin to America, Howe began the task with which his name will always be associated. In this he was under the instruction of three Harvard graduates—John D. Fisher, John Homans and Edward Brooks. The beginning was on a very small scale; three children of one family whom he found on one of the public roads were taught at his father's house, and subsequently at a small hired house in Hollis Street. The origin of this great work for the blind is best told in the following letter from a friend of Horace Mann:

"When we first became acquainted with Mr. Mann he took Mary (afterwards Mrs. Mann) and me to a small wooden house in Hollis Street where, in the simplest surroundings, we found Dr. Howe with the half-dozen first pupils he had first picked up in the highways and byways. He had then been about six months at work, and had invented and laborously executed some books with raised letters, to teach them to read, some geographical maps, and the geometrical diagrams necessary for instruction in mathematics. He had gummed twine, I think, upon cardboard, an enormous labor, to form the letters of the alphabet.

"I shall not, in all time, forget the impression made upon me by seeing the hero of the Greek Revolution, who had narrowly missed being that of the Polish Revolution also; to see this hero, I say, wholly absorbed, and applying all the energies of his genius to this apparently humble work, and doing it as Christ did, without money and without price. His own resources at this time could not have paid the expenses of his undertaking, with all the economy and self-denial he practised. The fuller purse of his friend and brother Dr. Fisher, assisted him. Soon after our visit to him, he brought out his class for exhibition, in order to interest people and get money sufficient to carry on the work on

a larger scale. The many exhibitions given created a furor of enthusiasm, and Col. Perkin's great heart responded to the moving appeal. He now offered his fine estate in Pearl Street, a large house and grounds, for the use and benefit of the blind, provided that the city of Boston would raise $50,000 for the same purpose. To this appeal the ladies of Boston responded by planning and holding the first fancy-fair ever known in Boston. It was in Faneuil Hall, and everybody contributed either in money or in articles for the sale. The net result of this fair amounted to something over $49,00."

Howe was a practical man, a financier, an active force in reforms and in all that made for human progress. His motto was, "Obstacles are things to be overcome," and he lived up to it. New working machinery was necessary; he created it, instructing his corps of teachers so thoroughly that later, when the Sydenham School in England was established, a whole corps of former pupils of Howe were selected to give the instruction; he invented raised letters for printing the Bible, a wonderful achievement in itself; in person he superintended every detail of the work, and gave to the world a New Testament for the Blind in 1837, and an Old Testament in 1843. These were reduced one half in size as compared with the books then in use in Europe. This materially diminishing the cost. The plates alone for this work meant an outlay of $13,000. In his school he maintained strict discipline by the simplest of rules,—early hours, cold bathing, careful diet, and exercise in the open air and gymnasium; he blindfolded himself, and thus went about for weeks in order more fully to enter into the life and spirit of his pupils. His work outgrew the size of a commodious house, and in 1839 he secured larger quarters.

In the midst of these arduous duties he heard of a seven-years-old child, blind, deaf and dumb, and deficient in the sense of smell, the result of an attack of scarlet fever in infancy. She was at Hanover, New Hampshire. Here was the opportunity for putting to a test his long cherished belief

that, notwithstanding the positive statement to the contrary of such high authorities as Sir James Mackintosh, Sir Thomas Dick Lander, Dugald Stewart, and Sir Astley Cooper, such a child could be educated. The story of his success with Laura Bridgman has become too well known to require repetition. It was one of the most brilliant exploits in philanthropy, ancient or modern. Who may not envy Samuel Howe the joy of that hour when his persistent, patient, almost supernatural power reached the light of reason in the child's hitherto lifeless mind, and she answered with a smile of surprise? If you would follow the history of Laura Bridgman's wonderful progress, study the annual reports of the Blind Asylum by Howe, and Charles Dickens' inimitable and pathetic description.

Howe continued as superintendent of the Perkin's Institution (as it soon came to be known) for forty-three years, and many of his ideas remain to-day practically unchanged. Two points in his administration of that institution are worth special mention. First, he maintained that the blind should become self-supporting, and to accomplish this he established a department of manual labor. Second, he strove for the development of those individual traits or tendencies inherent in the several pupils. Music was the branch mostly taken advantage of by these unfortunates, although many other occupations were developed.

Busy as Howe was with his duties at the Institution for the Blind, he found time to aid another class of dependants whose presence in the community is a grave offense. These are the feeble-minded and idiotic. He had seen, also, the successful workings of the articulate method in teaching deaf-mutes, when he was in Europe. He tried to introduce the method here, and was met with ridicule, indifference and strong oppositon. "Don Quixote" was the term most often employed in referring to his suggestion. The American Asylum for Deaf

Mutes at Hartford refused to give him an opportunity to test his convictions, so he quietly began with two little deaf-mutes of his own finding, and by going to the homes of others succeeded in inducing the parents to give the method a trial. Soon people ceased to laugh, then they admired and wondered, and then the School for Feeble-Minded Children was established. To-day it is one of Massachusetts' noblest public institutions.

The State acquiesced in Howe's suggestion that a commission be appointed to investigate the number and condition of idiots within its borders. The report of that Commission (1848), of which Howe was chairman, was a revelation as well as a mortification to Massachusetts folk. The Legislature appropriated $2,500 per annum for three years, to try the experiment of teaching ten idiotic children.

Then, in 1851, Howe plunged into the anti-slavery movement; with several others he started the "Commonwealth," and for more than a year was its literary editor. In that cause he was a vigorous partisan. When the Civil War broke out, though he had long passed the military age, Howe put himself at the disposal of the government, and was appointed a member of the Sanitary Commission; as such he followed the course of the struggle with close and intense interest. He was of great assistance to the Union, for he was a trained man of vast experience. In 1863 he was appointed one of the commission to inquire into the condition of the freedmen of the South, and the subsequent report of that Commission resulted in establishing the Freedman's Bureau.

In 1865 Governor Andrew appointed him chairman of the recently established Board of State Charities (1863). His successor, Frank B. Sanborn, thus spoke of Howe's services on this board:

"When he came to the head of the public charities of Massachusetts, late in 1865, his genius soon found means to turn both our theory and

practice in new directions, and to convert by gradual changes the existing policy of congregating the poor and defective in large establishments, into a wiser system. In practice, it is true, much remains to be done, especially with regard to the insane; but Howe's theory has become the accepted one in New England and elsewhere. He began with the dispersion of children, then in poorhouses and reform schools, among the kindly families of New England, and now there is hardly a state of the Union where such is not the adopted policy. When the inmates of a charitable establishment could not be wisely placed in a family, he advised that the establishment should be kept small, and its management brought as near to the mass of the people as practicable."

Howe's "General Principles of Public Charity" is often quoted; here are some of those principles:

"It is better to separate and diffuse the dependent classes than to congregate them."

"We ought to avail ourselves of those remedial agencies which exist in society, the family, social influences, industrial occupations, etc."

"We should enlist the greatest number of individuals and families in the care and treatment of the dependent."

"We should build up public institutions only in the last resort."

"These should be kept small, and arranged as to turn the strength and faculties of the inmates to the best account."

Such views, like his views on the care and education of the blind, deaf and insane, were once thought revolutionary, but to-day the civilized world conducts such departments upon the lines laid down by Howe. He was the first to suggest the establishment of visiting agencies. He resigned from the board in October, 1874.

Some of my readers may remember the interesting meeting held at Bumstead Hall in January, 1869, in behalf of the Cretans. Howe was one of the prime movers, and the $37,000 raised was entrusted to his care. Personally he visited the seat of war in order that he might the better disburse the funds. This visit was a triumphal march, and witnessed the gratitude of the Greek nation in recognition of his service then as well as that of forty-five years before. After eight months of hazardous work in distributing food and clothing

to those unhappy people, he returned to Boston, organized a Fancy Fair, and so added twenty thousand dollars to that fund. He also published a paper called "The Cretan," to advocate the lost cause.

In 1870 Howe was one of the commissioners appointed by the Federal government to visit Santo Domingo and report upon the feasibility of annexing it to the United States. Annexation having failed, a company was formed in this country to lease from the island the Peninsula of Samana. Howe became one of the directors of this enterprise, and again visited the West Indies. Success seemed within his grasp, when one of the frequent island revolutions shattered public confidence and the project failed. However, he spent a year in Samana, trying to regain his health, which had been shattered. Finally he was able to return home, where he took up his duties as a Trustee of the Massachusetts General Hospital, but his vigor gradually failed until his death in Boston on January 9th, 1876. The Governor of Massachusetts sent the following special message to the Legislature, then in session:

"I have the mournful duty of communicating to the General Court tidings of the death of a distinguished citizen of Massachusetts, Dr. Samuel G. Howe of Boston, for nearly half a century connected most prominently with the charitable and educational institutions of the commonwealth.

"The services rendered by Dr. Howe to Massachusetts, to the United States, and to the whole world, by his eager, energetic and long-continued labors to educate the blind and the deaf, to reform the discipline of prisons, to instruct the idiotic, and to ameliorate the condition of the insane, and of the unfortunate of all classes, merit the recognition which they have received in years past, and call for some public tribute to his memory, now that his long and noble career of philanthropy has closed.

"At the time of his death he was still at the head of the Massachusetts Asylum for the Blind, of which he was the founder, and for more than forty years the Director. I am informed that his funeral rites will be performed there, in presence of the pupils whom his skill has instructed, and of whom, at his suggestion, this Commonwealth has long been the beneficent patron.

"I leave to the wisdom of the General Court the adoption of such

measures as may testify the sorrow which the people of Massachusetts feel at the death of a philanthropist so illustrious, and a public servant so faithful in his high vocation."

The Senate and House held appropriate services at which speeches were made by leading members, and the following resolutions were adopted:

"RESOLUTIONS OF THE GENERAL COURT.

"*Resolved,* That the Commonwealth of Massachusetts, ever mindful of the welfare of the poor and the claims of the unfortunate among its people, recalls with gratitude the constant and efficacious service devoted by the late Dr. Samuel G. Howe to the education of the blind, the deaf, and the feeble-minded children of this Commonwealth, to the improvement of the discipline of prisons and reform schools, to the better care of the insane, the prevention of pauperism, and, in general, to the public charities of Massachusetts, with which he has been for a whole generation officially connected.

"*Resolved,* That especial mention ought to be made of that grand achievement of science and patient beneficence, the education by Dr. Howe of deaf, dumb, and blind children in such a manner as to restore them to that communication with their friends and with the world which others enjoy, but from which they seemed wholly debarred until his genius and benevolence found for them the key of language, accustomed it to their hands, and thus gave them freedom, instead of bondage, and light for darkness.

"*Resolved,* That the people of Massachusetts, always desirous of liberty for themselves and for others, proudly cherish the recollection of that gallant spirit which led Dr. Howe, in youth, in mature manhood and in advancing age, to rank himself, with many or with few, among the champions of oppressed races and emancipated nationalities, emulating in this the deeds of his countrymen in the American Revolution, and the noble career of his friend and the friend of mankind—the illustrious Lafayette.

"*Resolved,* That we tender our sympathy to the family of the deceased, and that a copy of these resolutions be forwarded to them."

Governor Bullock in his eulogy said: "Nor can we better discharge the duty of this hour than by fastening upon his memory the title which shall carry to the schools of the State, to all the walks of life, whether of study or business or leisure, to all the ambitions and activities of this wonderful people,

suggestions and inspirations for the consecration to the welfare of the race,—the title of the *Massachusetts Philanthropist.*"

Henry I. Bowditch wrote, "With the exception of Garibaldi, I have always considered Samuel G. Howe as the *manliest* man it has been my fortune to meet in this world. The two are in my regard equal, and very simliar in their traits of character. Both have been fearless of any personal danger in the fight; both have been intensely loyal to what they deemed the right; both have always been ready to throw themselves into the front ranks in defense of the weak and downtrodden; both, at times impulsive in word and action, often to a fault, yet always commanding the respect even of opponents, because self seemed always subordinate to their ideals of justice and of truth."

George F. Hoar said, "His is one of the great figures in American history; I do not think of another who combines the character of a great reformer, of a great moral champion, of a great administrator of great enterprises, requiring business sagacity and wisdom as well as courage, always in the van, with the character also of a knight-errant who crossed the sea, like the Red Cross Knight of old, to champion the cause of liberty in a distant nation. There was never on the soil of Massachusetts, fertile as that soil has been of patriots and heroes and of lovers, a more patriotic hero, a more loving knight."

DAVID HUMPHREYS STORER.

David Humphreys Storer was born in Portland, Maine, March 26th, 1804. After receiving his A. B. degree from Bowdoin College in 1822, he studied medicine at the Harvard Medical School, whence he was graduated M. D. in 1825.

Early he became interested in medical education, and in 1838 helped to found the Tremont Medical School. With

him were associated Edward Reynolds, Jacob Bigelow, and Oliver Wendell Holmes,—all to become professors, as was himself, in the Harvard School. In the Tremont School, Storer was a hard worker. Warm-hearted, with an impulsive nature, he threw himself into his tasks. His enthusiasm was contagious, and did much to popularize the teaching at that School, which for a quarter of a century produced so many well equipped and prominent physicians. To young men beginning the study of medicine, Storer was a warm friend. For him the Hippocratic relation of father and son was the position of teacher and pupil. With his eager nature, and the courage to call a spade a spade, he often ruffled the older men, but all admitted that his motives were honest and his purposes just.

In 1854, September 9th, he was elected Professor of Obstetrics and Medical Jurisprudence at Harvard, as the successor to Walter Channing. These branches of medicine had not reached that state of high cultivation of which we boast today, so it was fortunate for the school and its students that they were entrusted to such a hard, conscientious worker as was Storer. In the fourteen years of his professorship, Storer was never absent from his duty, and tardy but thrice. This unusual fidelity seems the more remarkable when one learns of the immense obstetrical practice under which he staggered.

As a lecturer, Storer was a success; clear, positive, practical and interesting. Each student felt that the instruction given was directed to his individual needs. The men soon learned that they had in this teacher a sympathetic friend as well as a valued adviser. One of his associates in the Faculty said of him: "As a Professor he was remarkable beyond any of his colleagues for the personal interest he took in the students, He kept up a familiar, friendly, paternal, or rather fraternal companionship with many among them, and did more probably than any one of us to make them love their medical Alma

Mater." These qualities caused them to elect him Dean of the School, a post he held for nine years (1855-64) with increasing advantage.

Storer's treatment of the subject he taught was eminently practical; he taught "patience and expectancy up to the proper time for interference, prompt and fearless action when that time came." That is a good motto for the obstetrician. To it should be added Storer's other maxim, that "Codes of ethics are made for thieves, not for an honorable profession." He was visiting physician at the Massachusetts General Hospital from 1849 to 1858 and there his instruction to the house-officers made his service a great training school.

Running parallel with this busy life in the practice of medicine was another of equal activity in natural history. Storer was one of the earliest members of the Boston Society of Natural History. It is worthy of mention that at the first annual meeting, 1831, of this Society, six of the seven officers then elected were physicians, a proportion which held good at the annual election of 1855. Schools of natural history were then few in this country, and we find many physicians who afterwards became prominent taking their lessons in advanced science at the meetings of this Boston society. Rogers, Gould, Cabot, Jackson, Agassiz, Gray, Pickering, Brewer, Bryant, Bouvé, Sprague, Wyman, Green, Binney, Ware, Harris, Warren, Channing and Shurtleff were some of the physicians associated with Storer in this society, in that important era of biological upheaval—the Darwinian era. These meetings had much of the attraction of a social club. Each member endeavored to add his contribution, and by suggestion aided to improve the contributions of the others. Among this group of workers Storer held a high place. Elected as the first Recording Secretary, he shared with the President, Jeffries Wyman, much of the detail work in laying a solid foundation for the Society. He held this office for six years, and was

one of the seven members appointed to give lectures. In that capacity he made a report (1831) on Mollusca for the Geological Survey of the State, and gave two lectures on Shells. In 1836 he was elected curator, and so won by their votes the thanks of the Society "for the great zeal, accuracy, and fidelity which he had manifested in its behalf since its establishment." When Curators were elected (1838) for the separate departments, Storer was chosen for the department on Reptiles and Fishes. This was in the year following his well-known report to the Legislature upon the Fishes and Reptiles of Massachusetts. In 1843 he began a seventeen years service as Vice-President of the Society.

The Mason Street rooms of the Society were found incapable of further enlargement to meet the needs of the growing Cabinet, and in 1845 Storer, Binney, Gould and Charles T. Jackson were appointed a committee to solicit funds for the erection of a new building. In 1848 the Society purchased the old building on Mason Street, then recently vacated by the Harvard Medical School. For this accomplishment Storer shared with his associates the thanks of the Society "for the earnestness and perseverence shown by them in raising the funds for adapting the new building to the use of the Society." The annual address was assigned to him for that year, and the records call his effort eloquent and interesting. Concerning his thirty years of constant service to this Society the historian says:

"Dr. D. Humphreys Storer was continually bringing forward specimens for the cabinet; at one time he presented seventy specimens, all carefully put up by him in glass bottles and labelled. To his generosity mainly was due the fact, that out of one hundred and twenty species of Massachusetts fishes then known, ninety were in the collection, and every described reptile of the State with one exception."

Storer's important publication on natural history was his "History of the Fishes of Massachusetts," 1867. It consists

of 287 pages with thirty-seven plates, and is a classic in North American Ichthyology. More recent works may have increased the variety, but for the species described by Storer no better or more accurate book has appeared. This work grew out of his appointment in 1839 as one of the Commissioners on the Zoölogy of Massachusetts. That commission was the forerunner of the fishery commission of the national government and of various state commissions. In compiling this book Storer had to obtain his information from the markets or from the fishermen, and the fact that years of work by other investigators have failed to alter materially his statements shows that he made no mistake in the choice of his sources of knowledge. A fellow worker in this field of natural science says of him: "In the amount of information given, with its accuracy and style of presentation, he has established his claim to present and future gratitude, and has proved his right to rank amongst the foremost of American ichthyologists."

Storer was an active member also in the American Academy of Arts and Sciences, the American Philosophical Society, the Boston Society of Medical Improvement, the Massachusetts Medical Society, the American Medical Association, the American Association for the Advancement of Science, Honorary Member of the New York Medical Society, and of the Rhode Island Medical Society, and Corresponding member of the Academy of Natural Science of Philadelphia. Bowdoin College conferred the LL. D. upon him in 1876.

Upon the resignation of Professor Storer his associates in the Medical Faculty sent him the following letter:

"Dear Friend and Colleague: It is with great regret that we, the members of the Medical Faculty, have received your note stating that you have sent your resignation to the Corporation. We had hoped to continue long to profit by your services and to enjoy your companionship. We trusted that you would share with us the pleasure of seeing our

institution, so long and deeply endebted to your labors, flourishing and extending still further its usefulness and reputation.

"You will carry with you the kindest remembrances of your colleagues and the recollection of services which we feel to have been of the highest value to the cause of medical education. We are sure that the Medical School and the University, on the roll of whose honored instructors your name will stand recorded, when the edifice which now shelters their students shall have all crumbled to ruin, you will still remain, as we confidently believe, the friend and counsellor of those with whom you have been so long associated.

"As a teacher you have been eminent, interesting, instructive, indefatigable; as Dean, attentive to every duty, and ever watchful for the welfare of the students; as a colleague always kind and devoted.

"This is our record in simple truth and justice. Accept our kindest wishes at parting and believe us

"Very sincerely your friends."

(Signed by the members of the Faculty.)

As a man, Storer was genial and charitable. An enthusiast of the highest type, he was successful in many branches of work which would have crushed a less active man. Fearless, impulsive, positive in his opinions, with a frankness of expression which often brought him antagonism, his nature rebelled against all forms of deceit and hypocrisy, and he never hesitated to expose either. He died at the age of eighty-seven, in Boston, on September 10, 1891.

JOHN BARNARD SWETT JACKSON.

J. B. S. Jackson was born in Boston, on September 5, 1806. He was graduated from Harvard, A. B., in 1825, and took his M. D. there in 1829.

Jackson never took up practice, but like his two associates in the Medical Faculty elected at the same meeting* with himself, he gave his life to the scientific aspects only of medicine. It has been said by one of his biographers that he was too

* April 3, 1847. Oliver Wendell Holmes and Jeffries Wyman. Corporation Meeting.

sensitive, too scrupulous, to work as a private practitioner. By others it has been said that his constitution and nature were too delicate for the rough out-of-doors work of the physician's life. Whatever the cause, his reputation rests upon his accomplishments as a pathologist. Disease and its effects upon organs, rather than its relation to health, was his life-long study. As a pathologist his fame became international. Holmes styled him the first American pathologist of his generation. Jackson was not a microscopist; indeed, microscopists were scarce in his time. But what he knew, he knew thoroughly, and never assumed to know more than his eyes taught him. He was devoted to his work, and early won a reputation for sagacity and accuracy which made his word law. His opinion was given with such modesty and truthfulness that it was never questioned.

Jackson loved knowledge for its own sake, and as a teacher he imparted that knowledge with such exactness and originality that its genuineness was immediately recognized. It was upon this basis that his fame as a teacher rested, rather than upon fluency or copiousness of speech. One of his characteristics was his devotion to the idea of the moment. He had perfect confidence in the accuracy of his observations, which he pursued with steadfastness and success.

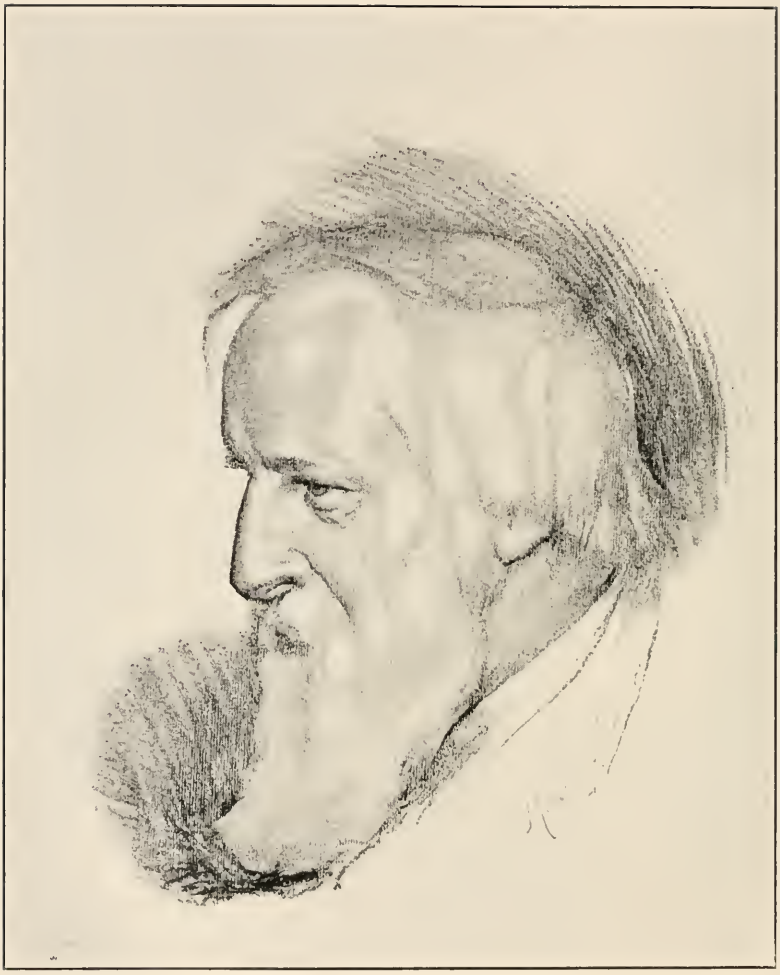
In 1847, the year of his election as Professor of Pathological Anatomy in the Medical School, Jackson published a catalogue of the Cabinet of the Society for Medical Improvement. He had been curator of this Cabinet for many years, and its perfection was due to his personal labors. He had been one of the early members (1831) of the Society, and the Cabinet became his special care. This catalogue was comprised in 350 pages of descriptive anatomy and pathology, and was admitted to be the most valuable contribution to pathological anatomy until then made in this country. The Cabinet

subsequently became the property of Harvard University and has been labeled the "Jackson Cabinet."

In this same year (1847) John C. Warren presented his large and valuable collection of anatomical and pathological specimens to the Medical School, and Jackson immediately began the long and devoted labor of arranging and properly displaying the gift. In 1870 he published a catalogue of the Warren Museum, in the form of an octavo volume of 750 pages. In these two catalogues was contained information other than what the name suggests. In fact, the complete work was then the best text-book on pathological anatomy in this country. All the specimens are classified systematically, and a large proportion of them are described in such a way that each may be consulted for information on various affections. Besides these descriptive catalogues Jackson made many valuable observations. One was that the decidua was not a false membrane, "but a changed condition of normal tissue;" another was the partial antagonism of or incompatibility between tubercle and cancer, and the infrequency of tubercle in alcoholic subjects.

Jackson had the greatest regard for young practitioners, and the many expressions of gratitude and affection which his death called out have seldom been equaled in the medical annals of this country. He was for years one of the instructors at the Tremont School,—that valuable primary school from which Harvard frequently drew her teachers. He served his generation well; witness these notices; the first is from an editorial in the "Boston Medical and Surgical Journal," January 9, 1879, and the second from the pen of his old colleague, Oliver Wendell Holmes:

"No man has ever died among us who has been more universally loved and respected, or whose loss has been more felt than his will be by the members of the profession to which he belonged. He was less widely known to the community at large than many others, but it would be safe to say that no one ever heard his name mentioned but in tones of kindly



Henry D. Bervitel

A. B. 1828; A. M.; M. D. 1832.
Jackson Professor of Clinical Medicine 1859-1867.

regard, or his character referred to except as a man without guile, true as truth, pure as purity, honest as nature herself, whose works he studied. It may sound like extravagant language to claim so much for him, but he was quite exceptional in the singular child-like simplicity and transparancy of his character."

"If such a title were known to the Calendar as Saints of Science, both these (J. B. S. Jackson and Jeffries Wyman) faithful, sincere, modest, pure minded students of nature would be numbered among them."

Jackson died in Boston on January 6th, 1879.

HENRY INGERSOLL BOWDITCH.

Henry Ingersoll Bowditch was born in Salem, Massachusetts, August 9, 1808. His father, Nathaniel Bowditch, an eminent mathematician, was an Overseer of Harvard College, President of the American Academy of Arts and Sciences, and a member of many foreign scientific bodies. Under the eye of such a man, and the influence of a gentle mother, Bowditch had an unexcelled opportunity for the development of a character of individuality and force which made him a leader of men. In boyhood he was generous, sympathetic, truthful, manly, impulsive, and always ready to give and take in the strenuous plays of his companions

He was graduated A. B. from Harvard in 1828, receiving the A. M. also. In 1832 he obtained his degree in medicine from Harvard. After his medical course he was House-Pupil at the Massachusetts General Hospital under Jacob Bigelow, James Jackson and John Ware, three men who had influence in shaping his medical character. He took naturally to medicine, rather than to surgery. In pursuance of the plan thus selected, Bowditch continued his studies in Paris during 1832-34, under Louis, of whom he wrote, "my beloved master in medicine, whose noble example will always lead every honest scholar to a reverent regard for scientific truth, whose works have been to me a stimulus to patient labors in my pro-

fession, and whose friendship was to me a lifelong delight." The great teacher found in his pupil a mind already fitted by inheritance and training to comprehend and digest the iconoclastic doctrines of the medical reformer. For the methods which he encountered in Louis' teachings he had previously been schooled by Jacob Bigelow, one of the first in this country to accept the system of precise methods of observation, and accurate analyses and record of facts in place of the dogmatic, pedantic system of his time. The conscientious regard for duty of James Jackson, and the quiet, judicious, reasoning method of John Ware left their imprint also upon Bowditch and contributed to his success. While in Paris he was a pupil under Andral and Chomel.

Bowditch began practice in Boston in 1834. While passing through the waiting stage he used his time to advantage. With a classmate, Charles F. Barnard (A. B. 1832; M. D. 1837), he procured rooms in the Warren Street Chapel, and formed classes for the education and betterment of the poor. Here was established a bond of love and confidence which time strengthened and fixed. We read that later in life the boys and girls used to come to his office on Saturday afternoons with their little earnings for the savings-bank books which he kept for them.

The year after his return from Europe there occurred an event which marked a turning point in Bowditch's life. In the famous Garrison mob of 1835 the young physician was a chance eye-witness to the unjust treatment of that youthful anti-slavery agitator by "gentlemen of property and standing," and on October 21, Garrison was forced to take refuge in the Leverett Street jail. Bowditch was deeply stirred. From that moment he became an anti-slavery partisan. In his diary he says that he determined to devote his "whole heart to the abolition of that monster, slavery. But, even anti-slavery never has taken me away from constant labor for the

elevation of medicine." This decision of the young doctor to take up the cause of the slaves implied a great deal. Church, state, the constitutions and laws of the country, old friendships and social ties, were on the other side. He was mocked, sneered at and "cut" on the street by his father's old friends. In a small city like Boston, where "society" was rigid and autocratic, this ostracism was bitter. Bowditch, however, believed he was right, which meant that no power on earth could move him. With malice towards none, he labored on awaiting the time when his intelligent foresight should become apparent. His life story during this great movement is wholly admirable. We see the physician-abolitionist, with a pistol in one hand, taking the runaway slave in his chaise to a place of safety; working for the fugitive Latimer who was arrested and taken from Boston in 1842; agitating the "Great Massachusetts Petition," which resulted in the passage of a law forbidding the use of our State jails for the detention of fugitive slaves, and prohibiting our State officers from helping to return them.

He was a member of the Vigilance Committee in 1846 and in 1850; secretary of the Faneuil Hall Committee in 1846, and a co-worker with Parker, Phillips, Garrison, Sumner and Quincy. The agitation aroused by these men was little short of revolutionary to the minds of most of the community. "Fanatics," "radicals" and "iconoclasts" were some of the terms applied to them. Then came the Anthony Burns scene in May, 1854, when Burns, an escaped slave, was given up to his master, and taken in fetters down Court and State streets with "an overwhelming force of soldiers," State and national. If this was legal, and in conformity with public opinion, our abolitionist friends argued, then justice must indeed be blind; so they made a vow, as they saw the United States revenue cutter steaming away with Burns, that such a disgrace should never again happen on the soil of Massachusetts. Bowditch

led in the formation of an Anti-manhunting League,—a secret oath-bound club, with twenty-four lodges in as many towns, and with a membership of over four hundred, who were armed with "billies" and were trained for capturing and carrying off any slaveholder who should come to the State to hunt and reclaim a runaway slave. Bowditch was secretary of this surprising organization, the records of which were kept in cipher.

With the advent of actual war, Bowditch threw himself with spirit into the cause of the North, and sent two sons to die on the field, where age precluded his own presence. He said later, "I am proud to remember that I was among the first of those who advocated physical resistance to slavery, as we saw it in the North." Not long after this outburst he was to see Colonel Shaw march down Court Street at the head of his negro regiment. And he long survived slavery abolished, and peace and industry established in the South, while he himself was honored and loved by both North and South.

Leaving this political side of his life, and following his professional record, let us see how faithfully he lived up to his assertion that his interest in anti-slavery did not take him away from his labor for medicine. Upon his return from Europe in 1834 he was admitted to the leading medical society in the city, the Boston Society for Medical Improvement. In the following year (1835) he and John Ware organized the Boston Society for Medical Observation, and later (1846) when this student-society, as it had been, needed reviving, he was one of eight physicians to undertake the work. A life of almost fifty years followed, during which the Society was a great factor in extending and popularising the methods of Louis. The teachings of this eminent master in the study of autopsies were also carried into private classes at the Massachusetts General Hospital.

Bowditch's first publications were translations of Louis's

works on "Typhoid Fever," on "Phthisis," and one on the "Proper Method of Examining a Patient." His lessons in percussion and auscultation, as well as his method of examining patients, made his visits to the wards of the Hospital a help to the students and house-officers. In 1838 he became Admitting Physician at the institution. At that time negroes were not received as patients there, but Bowditch admitted one with pneumonia. This action was vetoed by the authorities, when he resigned his position, a course which resulted in his gaining his point, as well as in the return of his resignation, "not accepted." In 1846 he was promoted to the office of Visiting Physician, and held it until 1864. In 1863 he was made President of the Carney Hospital and its first Visiting Physician. That hospital was opened in 1863. Bowditch had been for some time Physician to the St. Vincent Orphan Asylum, then under the charge of "that most remarkable woman," as he called the founder of the Carney Hospital, Sister Superior Anne Alexis. He worked hard for the establishment of the Carney, and his tact, judgment, and wisdom helped lay a good foundation for that excellent institution.

Soon after the opening of the Boston City Hospital (1864) Bowditch was appointed Visiting Physician there, and he held the place from 1868 to 1871. Later he was Consulting Physician to both Carney and City Hospitals, as well as to the New England Hospital.

On January 22, 1859, Bowditch was elected Jackson Professor of Clinical Medicine at the Harvard Medical School. He had previously been connected with the Boylston Medical School (1852-1855), where he taught auscultation and percussion. As a teacher, Bowditch was an earnest advocate of the principle that a physician should treat the individual, the patient, as well as the disease. This need he impressed upon the pupils, who sought eagerly the privilege of being under his guidance. To younger men he was kind and generous, to

his professional associates an inspiration. As one reads the life of this eminent man, one can but admire both his great heart and his active brain. Everything which appealed to him for the elevation of mankind received his enthusiastic support. As director of the Boston Co-operative Building Association he was an important agent in improving the dwellings of the poor. He was a constant visitor to "Crystal Palace," and his working evenings spent with the people at that notorious old tenement, sowed the seed which has developed into our system of industrial education. He was an advocate of Congressional action for a more humane medical service during the War, and so he helped secure an ambulance service; in sanitary science he guided the State Legislature to the creation of the first Board of Health in this country. This last he accomplished by means of a comprehensive and convincing chart showing the prevalence of pulmonary consumption in Massachusetts, and its relation to soil moisture. He was appointed President of the Board of Health, upon its creation in 1869, and retained the position ten years. During his official life as a member of the Board he was an uncompromising foe to political chicanery, and, when public sentiment was excited and misled, he protested against changes then enacted in the law. This he did by appealing to the intelligence and honesty of the people, and insisted upon resigning from the Board "as a protest" against the new policy.

In 1878, when the country was panic stricken by the yellow fever epidemic, Bowditch was chosen unanimously as the one person fitted to cope with the situation, and he was made a member of the National Board of Health. Unfortunately his own health limited his services to a year's membership on the Board.

As a physician and teacher, Bowditch was eminent. In both capacities he evinced an eagerness to know the latest and best, and an honest, fearless, frank unselfishness which made

him a valuable counsellor and a trusted guide. His contributions to medical science were many; some are classics. His work on paracentesis is best known. It was done in 1850, some time after Morrill Wyman's "brilliant operation" for empyaema. In 1859 Bowditch visited Europe, and there advocated the operation for pleural effusions with such earnestness that it was generally adopted both in Great Britain and upon the continent. In 1850 he was a pioneer advocate of laparotomy for abdominal and pelvic tumors and abscesses. Other advanced thoughts of his dealt with the advisability of specialties in medicine, and the propriety of women studying medicine.

Bowditch resigned his professorship at the Medical School on August 31, 1867. In 1876 he was President of the American Medical Association, whose meetings he constantly attended. Among the members he was admired and popular. In addition to all this, Bowditch was a member of the American Association for the Advancement of Science, of the American Public Health Association, of the American Academy of Medicine, of the Paris Obstetrical Society, of the Paris Society of Public Hygiene, of the Boston Society of Natural History, of the Royal Italian Society of Hygiene, of the Association of American Physicians, of the New York Academy of Medicine, of the Philadelphia College of Physicians, and of the New York, Rhode Island, and Connecticut State Medical Societies. Some idea of the magnitude of his labors may be gathered from the list of his writings. They include more than ninety thousand manuscript pages of records of private cases, ten printed pages, and sixty-six pamphlets printed in twenty-nine journals or society transactions, with numberless short articles on various subjects. Among the most noted of his writings which have come down to us are:

Medical records of every patient treated from 1839 till 1887.

"Remarks on Dr. Martyn Paine's Unjust Criticism of Louis and of his 'Numerical Method.'"

"Short Sentences on Auscultation."

"The Young Stethoscopist. A Small Pocket 'Vade Mecum' for Students and Practitioners." With plates.

"Thoracentesis in Pleural Effusions," separate print, New York; separate print, Boston; "Twelve Years' Experience," before New York Academy of Medicine; Letters to Dr. Clifford; Letters to Dr. Holiday, Cincinnati; Remarks, Surg. Section Am. Med. Assoc.; "Dangers," etc.

"Value of Antiseptics in Empyema."

"Cases of an Anomalous Development of Tubercles at the Base of the Lung resembling Pneumonia." Separately printed.

"Topographical Distribution and Local Origin of Consumption in Massachusetts." In Medical Communications of Mass. Med. Soc., and separately printed.

"Apology for the Medical Profession as a Means of Developing the whole Nature of Man (as a Physical, Intellectual, Moral and Religious Being)." Address to the students of the Harvard Medical School, and published at their request. With "Additional Remarks on a Topic of Importance at the Present Hour."

"A Brief Plea for an Ambulance System for the Army of the United States, as drawn from the Extra Sufferings of the late Lieutenant Bowditch and a Wounded Comrade."

"The Ambulance System."

"Is Consumption ever Contagious?" A paper prepared for the Boston Society for Medical Observation.

"Cases of Perinephritic Abscess and its Treatment." Read before the Boston Society for Medical Observation.

"Report of the Committee on Climatology and Epidemics in Massachusetts."

"Consumption in America."

"Perinephritic Abscess; Lung Disease and Pleurisy."

"Thoracentisis and its General Results during Twenty Years of Professional Life." Remarks made at a meeting of the New York Academy of Medicine, April 7, 1870. Published by order of the Academy.

"Private Medicine and the Physician of the Future." Separate print.

"Electrolysis in Thoracic Aneurism." Read at a meeting of the Suffolk District Medical Society.

"Public Hygiene in America." Centennial address before an International Medical Congress at Washington, D. C.

"Public Hygiene in America," being the Centennial Discourse delivered before the International Medical Congress, Philadelphia, September, 1876, with extracts and correspondence from the several States; together with a Digest of American Sanitary Law by Henry G. Pickering, Esq.

OLIVER WENDELL HOLMES.

A. B. 1829; A. M. (Hon.) 1889; M. D. 1836; LL. D. 1880.
Parkman Professor Anatomy and Physiology 1847-1882.
Emeritus Professor 1882-1894.
Dean Medical School 1847-1853.

"Prevention of Consumption." A series of articles in the "Youth's Companion."

"The Aspirator in Pleural Effusions." Reply to Dr. Ferguson, of Troy, that the operation "had done more harm than good" in its various applications to different parts of the body.

"Modern Thoracentesis and Thoracotomy," a paper prepared for Pepper's "System of Medicine," and from which Dr. Donaldson has made copious extracts in the preparation of his article on "Affections of the Pleura," now to be found in the above work by Dr. Pepper.

"Open Air Travel as a Curer and Preventive of Consumption, as seen in the History of a New England Family." Reprinted from the Transactions of the American Climatological Association.

Henry L. Bowditch died in Boston on January 14, 1892, after a life of activity and usefulness such as for diversity of interest and benefits to posterity has had few equals.

OLIVER WENDELL HOLMES.

There are few incidents in the history of Harvard College more striking than the election on the same day, April 3rd, 1847, of Oliver Wendell Holmes, John Barnard Swett Jackson, and Jeffries Wyman to newly created professorships. These men had had many experiences in common. They were highly educated for the practice of medicne, yet none of them afterwards practiced his profession. Each rose to prominence in the science of medicine without losing his identity as a physican. With similar tastes and inclinations, each pursued a different line of study, and each reached the highest point in his own field. Any one of them could have chosen the others' line of research and lost nothing in glory; and doubtless science would have profited equally. In their situation as teachers in the Medical School the custom which had hitherto prevailed in the choice of professors was broken. The two Warrens, Waterhouse, Dexter, James Jackson, Jacob Bigelow and Gorham, were practitioners, and their fame as wise and able teachers remains associated with practice.

There was nothing suggestive of the scientific alone in the life or works of any of these men; all were what we now call "family physicians." The medical school system under them was, in fact, an extension of the apprenticeship method applied on a larger and more systematic plan. Now, however, a new line of thought was suggested, and a somewhat novel procedure was inaugurated. Students were to be encouraged to investigate for themselves, to search out the hitherto hidden secrets in the causes of disease. The senses were to be aided by the microscope; the anatomy and physiology and chemistry of the human mechanism were to be studied in comparison with like structures and processes in brutes. Plants and flowers and minerals were to be arranged in classes and subclasses, according to their qualities adapted to man's benefit; separate organs of the human body were to be studied minutely, and then properly to be classified. Whether the time, the School, and the student were all, or any of them, ready for the addition of this new line of instruction can best be judged by what I have narrated. Here let us learn of the men who brought the new things, rather than of their influence on the School. The first of that trio is Oliver Wendell Holmes.

Holmes was born in Cambridge, August 29th, 1809, that being Commencement Day at Harvard College. His father, the Reverend Abiel Holmes, was minister of the First Parish Church at Cambridge from 1792 to 1831. His mother was a granddaughter of a Dutch settler, Jacob Wendell, who came to Boston from Albany early in the eighteenth century, and married a daughter of Dr. James Oliver. On his paternal side, a grandfather, David Holmes, was a physician who served as surgeon in the French wars as well as in the Revolution. Thus our Holmes came of an ancestry of physicians, and inherited the names of two of the guild. His father, Abiel Holmes, wished his son to enter the ministry and sent him

to Phillips Academy at Andover (1824). The son, however, partook of the vivacious, sympathetic, social instincts of his mother, rather than the Calvinism of his father. Neither was there in the frugality of a minister's life anything to induce him to take up that one of the three professions offered to educated youths of his day. He spent one year at Andover, but, like the one year spent later at the law school, it served only to make the choice of medicine more attractive in comparison. He entered Harvard College in 1825, and was graduated with the class of 1829, a class often referred to as "the famous Class of '29," on account of the unusual number of its members who became famous. The following year he spent at the Law School, but the columns of "The Collegian" had more attraction for him than had the lectures of Professors Story and Ashmun, and one of his contributions, "Old Ironsides," made him a hero in his little world. In the autumn of 1830 Holmes began the study of medicine in Boston, first at the private school of James Jackson and others, and then at the Harvard Medical School. In April, 1833, he went to Europe, and continued his medical studies there until October, 1835; he reached home in December of that year.

Holmes could not explain why he changed from law to medicine. He tells us that he was drawn to the mysterious and obscure "ever since I payed ten cents for a peep through the telescope on the Common, and saw the transit of Venus." Here is one of his own charming passages:

"There is something very solemn and depressing about the first entrance upon the study of medicine. The white faces of the sick that fill the long row of beds in the hospital wards saddened me, and produced a feeling of awe-stricken sympathy. The dreadful scenes in the operating theatre—for this was before the days of ether—were a great shock to my sensibilities, though I did not faint, as students occasionally do. When I first entered the room where medical students were seated at a table with a skeleton hanging over it, and bones lying about, I was deeply impressed, and more disposed to moralize upon mortality than to take up the task in osteology which lay before me. It took but a short time to wear off this earliest

impression. I had my way in the world to make, and meant to follow it faithfully. I soon found an interest in matters which at the outset seemed uninviting and repulsive, and, after the first difficulties and repugnance were overcome, I began to enjoy my new acquisition of knowledge."

Holmes did not take a medical degree before he sailed for Europe. He evidently did not think this lack a serious handicap, for he writes, "I have found no difficulty whatever from not having my degree. They are not taken the least notice of,—nobody uses the title of Doctor, and I would not give a copper for any advantage it would give me." Those letters of his illuminate some of the dark old medical centres: "It is no trifle to be a medical student in Paris. I had attended a lecture of an hour and a half, and gone through a tedious dissection this morning before breakfast—that is, I left my bed at half after six, and did not sit down to breakfast till after eleven." Later he writes, "I am more and more attached every day to the study of my profession. * * * The whole walls round the Ecole de Médecine are covered with notices of lectures, the greater part of them gratuitous; the dissecting-rooms, which accommodate six hundred students, are open; the lessons are ringing aloud through all the great hospitals."

Again, he writes of Louis, "of serene and grave aspect, but with a pleasant smile and kindly voice for the student with whom he came into personal relations; modest in the presence of nature, fearless in the face of authority, unwearying in the pursuit of truth, he was a man whom any student might be happy and proud to claim as his teacher and friend." "Andral was by far the most eloquent and popular." "Broussais was like an old volcano, which has pretty much used up its fire and brimstone, but is still boiling and bubbling in its interior, and now and then sends up a spurt of lava and a volley of pebbles." Lisfranc was evidently not to Holmes' liking, for he writes, "I can say little more of him, than that he was a great drawer of blood and hewer of members;" and of Baron Larrey, Napo-

leon's famous surgeon, "Short, square, substantial man with iron-gray hair, ruddy face and white apron. To go round the Hôtel des Invalides with Larrey was to live over the campaigns of Napoleon, to look on the sun of Austerlitz, to hear the cannon of Marengo, to struggle through the icy waters of the Beresina, to shiver in the snows of the Russian retreat, and to gaze through the battle smoke upon the last charge of the red lancers on the redder fields of Waterloo." At the Hôtel Dieu the great Dupuytren was in his zenith; "A square, solid looking man, with a fine head, soft-spoken, undemonstrative, unless opposed or interfered with, when he would treat his students, I have heard, as a huntsman does his hounds." Ricord, "vivacious * * * the Voltaire of pelvic literature, who would have submitted Diana to treatment with his mineral specifics, and ordered a course of blue pills for the vestal virgins." Velpeau "looked as if he might have wielded the sledge-hammer rather than the lancet."

With Holmes in Paris were Henry I. Bowditch, J. Mason Warren, Waldo Emerson, James Russell, Hooper, and Greene. He spent much of his time while in Europe at the Ecole de Médecine, and under Louis at La Pitié. He was able also to travel and his letters describing peoples, places and events show us those times.

For Holmes, as for most other students in medicine who visited Paris then, Louis was the central figure. Favored by the good impression created on Louis by the younger James Jackson, Holmes found the great teacher a friend as well as an instructor. It is probably no exaggeration to say that the medical students of that date revered Louis almost to idolatry. Holmes' letters from Paris during those student days are full of historical observations, interwoven with biographical sketches of the more celebrated teachers in that great school. Besides Louis, Holmes studied under Andral, Broussais, Lisfranc, Baron Larrey, Dupuytren, Ricord, and Boyer. Even if

we had not Holmes' own assurance that he was "more and more determined to do what I can to give my own country one citizen among others who has profited somewhat by the advantages offered him in Europe," we might be sure that that quick-witted, keen observer, and earnest worker would bring home more than one mind's share of intellectual fruit for the benefit of other workers. Remember the difference in the anatomy laws at this period in France and in America. The tale is told in another chapter. Suffice it to state that in France dissection was allowed in full measure, while in America the only method by which bodies could be procured was by body-snatching. Holmes was schooled in Paris, and we see the impress of Paris reflected fifty years later at the opening of the new building for the Harvard Medical School,* on that occasion the younger, and some of the older members of the Faculty, influenced no doubt by a recent agitation concerning supposed abuses in dissection, took every precaution that the public should not inspect the dissecting room. To their confusion the venerable teacher not only dwelt with great plainness, upon the question of dissection, but actually invited his audience to visit the dissecting-room.

In one of his letters § from Paris (dated April 30th, 1834) Holmes gives the following account of his first year's stay there:

"My aim has been to qualify myself so far as my faculties would allow me, not for a mere scholar, for a follower of other men's opinions, for a dependent on their authority, but for the character of a man who has seen, and therefore knows; who has thought and therefore has arrived at his own conclusions . . . I am perfectly certain that I might have lived until I was gray without acquiring the experience I have gained in part, and hope still farther to improve by changing the scene of my life and studies."

---

* Boylston Street Medical School Building, dedicated 1883.

§ From "Life and Letters of Oliver Wendell Holmes," by John T. Morse, Jr., vol. I, pp. 130-31.

In a letter of Sept. 3, 1834, he writes:

"I am just going to become a member of a society of medical observation, which comprehends some of the most intelligent young French and foreign students. I have free access to the wards of M. Louis, a favor which he has granted only to a few; . . . I am devoted to my profession, and wish to return second to no young man in it."

Concerning this Society he writes later, "my belonging to the Society * * * brings me into contact with young men in confidential stations in most of the hospitals, lays their experience before me, and puts me under the obligation to be exact, methodical, and rigorous." In a letter of May 14th, 1835, he speaks of turning his attention to operations, and says that the supply of anatomical material is so good that "one who knows how to use his hands, and who gives his attention exclusively to the subject for a time, may, as I have said I have done, become an expert operator in a few weeks." Such was his equipment for his new position in the Medical School. He arrived home in December, 1835, and in 1836 was graduated M. D. at Harvard.

If the publication of "Old Ironsides," "The Last Leaf," and other poems had a tendency to militate against his gaining footing in private practice, such literary interests did not turn him from medical studies. He won the Boylston prize three years in succession, and was physician at the Massachusetts General Hospital for three years. In 1838 he was "mightily pleased" to receive the appointment as Professor of Anatomy at Dartmouth College. This position he held during 1839 and 1840. In 1838 he helped to start a private medical school in Boston. In this he was associated with H. J. Bigelow, E. Reynolds, and D. H. Storer, and the school became known as the Tremont Street School. Its relations with the Harvard School have been sketched in the chapter on Private Medical Schools. Holmes' special branch of teaching there was the Practice of Medicine, and his ability as a lecturer and teacher

in that branch has always been praised by his many pupils. While at the Tremont School, Holmes and Bigelow published a book on the "Practice of Medicine." They prepared this by taking Marshall Hall's "Theory and Practice of Medicine," and enlarging, correcting and improving it.

It was in 1843 that Holmes published his essay on the "Contagiousness of Puerperal Fever." Before that, his "Medical Essays" had given him a local reputation as a trenchant writer on medical topics; now, however, he showed an originality in thought and research which brought him into international prominence. In the face of fierce and abusive contradictions to the young writer by old and accepted authorities on obstetrical practice, one sees Holmes using that same calm, logical, convincing, clean-cut line of argument which leaves no doubt in the mind of his readers as to the reasonableness and soundness of his case, for he silences contention. One of his aphorisms was that it was better to prove something, than partly to prove many things. If Holmes never proved anything other than the contagiousness of puerperal fever, posterity owes him a debt. So it will be seen that he was a strong candidate for one of the new professorships created in the School.

On April 3rd, 1847, Holmes was appointed Parkman Professor of Anatomy and Physiology in the Harvard Medical School; in addition to these subjects he often gave instruction in microscopy and in psychology. In 1871 his title was changed, and the "whole settee," as he was wont to term his manifold duties, became a "chair," the Parkman Professorship of Anatomy. Holmes graciously and honorably filled it until his resignation on November 20th, 1882, when he was made *Emeritus*. During this period of thirty-five years of continuous service at the School, Holmes was Dean from 1847 to 1853; University Lecturer in 1863-64; and Overseer of Harvard College from 1876 to 1882.

This new professor in the Medical School belonged to the

Brahmin caste, as he used to call it; he was schooled under the best masters of Europe; he had enjoyed the highest advantages abroad and at home for acquiring that practical knowledge best fitted to supplement his scientific tastes; he was a faithful anatomist; a writer with few equals; an entertaining and fascinating teacher, with a charming personality. Indeed he was a great drawing card.

In my wide search for material for this history of our School, I have interviewed alumni ranging from the oldest living graduate* down to the youngest teachers in the School. Of the many reminiscences given me, none surpass in number, sweetness and enthusiasm those of Holmes' old pupils. No general estimate would satisfy them or do him justice. Some speak of his witty, bright, cheerful disposition, which robbed the dry study of anatomy of its weariness; some learned their lesson from his plain, concise, unpretentious homilies; others from his exact, clean-cut, well chosen, scholarly rhetoric; some were able to satisfy their conscience as practitioners of medicine with the outlines of anatomy and physiology as taught by Holmes; others found in him the embryologist, the histologist and the microscopist far in advance of his time. Some few, like R. M. Hodges, D. W. Cheever, Thomas Dwight, C. B. Porter, H. H. A. Beach, and M. H. Richardson, were privileged to serve him as assistants.

Holmes was a good anatomist. He strove incessantly, both by the preparation of his own dissections and by the constant study of authors, to give his pupils the best. To the lay reader who finds it difficult to reconcile the supposed hard-hearted anatomist with the genial, sympathetic, poetical medical student who failed as a general practitioner on account of his sensibility to the sufferings of others, this estimate may appear paradoxical. To such let me say that such a view lacks per-

* Samuel L. Abbot, A. B. 1838, M. D. 1841, died July 1st, 1904.

spective. Holmes loved the study of anatomy, and, tempting as must have been the promises held out to him from other sources, he steadfastly adhered to it. He did more; he gave freely, generously, and often to the gatherings of his fellows in Medicine those gifts which were refused to eager would-be purchasers. Osler puts it truly when he says of Holmes: "He will always occupy a unique position in the affections of medical men. Not a practitioner, yet he retained for the greater part of his active life the most intimate connection with the profession. * * * The festivals at Epidaurus were never neglected by him; and as the most successful combination which the world has ever seen of the physician and the man of letters, he has for years sat amid the Aesculapians in the seat of honor."

Holmes was not a great anatomist or a great scientist; his success as a teacher was due in large degree to this fact. He might easily have become either, had he been less generously diffuse. As a teacher he was careful, conscientious, punctual and painstaking. He was clear, with a remarkable fund of wit and humor which won for him the title of "the best lecturer on anatomy of his time in this country." No other lecturer could hold the attention of a wearied and turbulent class of students in the fifth consecutive hour of daily lectures, as Holmes could hold them. "Even over the dry bones, his wit sparkled; his similes and imagery delighted the crude and often rough youths before him; his courtesy, his patience, his amiable temper, subdued them into comparative quietude and even attention. It was his rule always to address himself to the lower rather than to the higher half of the class, as Professor Dwight says, it being a part of his humanity to do so." He was always the scholar; whether as lecturer, post-prandial speaker, writer, philosopher or wit, he never failed to leave the mark of his attainments. Few were as well able as he to trace much of our present knowledge, especially in anatomy, back to the

old masters, whose true worth he recognized. Hear him talk about those ancients, follow his description of their writings and their illustrations, accompany him through a copy of Albinus, of Vesalius, of Bedloe, or of Mascagni, and you may appreciate his remark accompanying the gift of his library to the Boston Medical Library Association: "These books were very dear to me as they stood upon my shelves. A twig from some one of my nerves ran to every one of them. From the time when I first opened Bell's 'Anatomy' to that in which I closed my Sharpey and Quain and my Braithwaite's 'Retrospect' they marked the progress of my studies and stood before me as the stepping-stones of my professional life. I am pleased that they can be kept together, at least for the present; and if any of them can be to others what many of them have been to me, I am glad to part with them, even though it cost me a little heartache to take leave of such old and beloved companions."

Holmes' love for the old masters was inherited. His father had been a poetaster, and wrote "Annals of America," a useful volume of historical research. Acquaintance with such work taught the son, in his various undertakings, an accurate and painstaking method which is not usually associated with the quick, rapid, almost intuitive mind of the wit and genius. He was one of the earliest microscopists in this country, and a good one. He was fortunate in securing one of the few microscopes in Paris, and he brought it home with him. He fitted up a special room in the North Grove Street building and gave special instruction. Thomas Dwight says of him, in this connection, that he "took the greatest interest in the manufacture of the microscope, speaking always enthusiastically of its discovery and successive perfections. * * * In 1847 he made, or certainly believed that he made, a discovery of cells in bone, which he showed at a meeting of the Society for Medical Observation. 'I was on the look-out,' he wrote me in

1889, 'for bone-cells, in the medical journals and books, and found nothing until about two years after my discovery of these (from the cancelli of the neck of the human adult femur). M. Robin described some cells which he had found not corresponding very well with mine.' The last note which I ever received from him, dated May 30th, 1894, was to request me to find the pictures which he had had made of these cells."

Holmes early gave up the practice for the science of medicine. Even if fortune had favored the aspirations he expressed in the Paris letters, it is doubtful whether he would have continued in practice. Cheever says of him in this connection: "Too sympathetic to practice medicine, he soon abandoned the art for the science, and always manifested the same reverence for death, and tenderness for animals. When it became necessary to have a freshly-killed rabbit for his lecture, he always ran out of the room, left me to chloroform it, and besought me not to let it squeak."

In the Faculty deliberations he was both progressive and conservative. In the important changes inaugurated in 1870 he was at heart in favor of new things, but he was timid as to the losses and dangers of radical measures, although not strongly opposed. The following letter of his to J. L. Motley, in December, 1872, is a good pen-picture of the state of mind of the older men in the Faculty at that time:

"Firstly, then, our new President Eliot, has turned the whole University over like a flap-jack. There never was such a *bouleversement* as that in our Medical Faculty. The Corporation has taken the whole management of it out of our hands and changed everything. We are paid salaries, which I rather like, though I doubt if we gain in pocket by it. We have, partly in consequence of outside pressure, remodelled our whole course of instruction. Consequently we have a smaller class, but better students, each of whom pays more than under the old plan of management. It is curious to see a young man like Eliot; a grave, calm, dignified presence, taking the ribbons of our classical coach and six, feeling the horses' mouths, putting a check on this one's capers, and touching that one with the lash,—turning up everywhere, in every Faculty (I

belong to *three*), on every public occasion, at every dinner orné, and taking it all so naturally, as if he had been born President."

At the dedication of the new building, for a school in keeping with the advances inaugurated, Holmes was the orator, October 17, 1883, and said:

"To one of the great interests of society, the education of those who are to be the guardians of its health, the stately edifice which opens its doors to us for the first time today is devoted. It is a lasting record of the spirit and confidence of the young men of the medical profession, who led their elders in the brave enterprise, an enduring proof of the liberality of the citizens of Boston and of friends beyond our narrow boundaries, a monument to those who, a hundred years ago, added a School of Medicine to our honored, cherished, revered University."

In regard to another important question discussed about this time,—the admission of women to the Medical School—Holmes voted with the majority in the negative, although many of his public utterances seem to make it appear that he was in favor of coëducation: "I have always felt that this (nursing) was rather the vocation of women than general medical, and especially surgical practice, yet I myself followed the course of lectures given by the young Madame Lachapelle in Paris; and if here and there an intrepid woman insists on taking by storm the fortress of medical education, I would have the gates flung open to her, as if it were that of the citadel of Orleans and she were Joan of Arc returning from the field of victory." Further than this he affirmed, "that he was willing to teach women anatomy, but not with men in the same classes; and, above all, that he should insist on two dissecting rooms, which should strictly separate the sexes." Probably, on this question as in the administration controversy, he was a passive sympathizer rather than an active partisan.

Holmes became a member of the Massachusetts Medical Society in 1836; he was anniversary chairman in 1852, and delivered the annual discourse in 1860, on "Currents and

Counter-Currents in Medical Science." This, with his paper on "Homeopathy and Kindred Delusions," aroused a great deal of feeling. At the Centennial Anniversary Dinner of the Society in June, 1881, he read a poem. He received from Harvard College, besides his A. B. (1829) and M. D. (1836), the honorary degree A. M. (1889) and LL. D. (1880.) In 1886 he went to Europe, when Edinburgh took the opportunity to confer upon him the LL. D.; Cambridge gave him the Litt. Doc., and Oxford the D. C. L. degree. The warmth of hospitality extended to him during this visit is courteously recognized in his "One Hundred Days in Europe."

On June 27th, 1874, the General Court of Massachusetts incorporated the Boston Medical Library Association. Holmes was one of the six original incorporators, and when the Society took form on August 20th, 1875, he was elected president. He continued in that office until 1888. In his address dedicatory of the new building, December 3rd, 1878, Holmes evidently spoke the dictate of his heart, when he said:

"A scholar's library is to him what a temple is to the worshipper who frequents it. There is the altar sacred to his holiest experiences. There is the font where his new-born thought was baptized and first had a name in his consciousness. There is the monumental tablet of a dead belief, sacred still in the memory of what it was while yet alive. . . . . every volume has a language which none but he can interpret. Be patient with the book-collector who loves his companions too well to let them go. Books are not buried with their owners, and the veriest book-miser that ever lived was probably doing far more for his successors than his more liberal neighbor who dispised his learned or unlearned avarice. Let the fruit fall with the leaves still clinging round it. Who would have stripped Southey's walls of the books that filled them, when, his mind no longer capable of taking in their meaning, he would still pat and fondle them with the vague loving sense of what they had once been to him,—to him, the great scholar, now like a child among his playthings?"

Twenty-three years later the Association dedicated the beautiful reading room in its present building to the memory of

their first president. On retiring from teaching Holmes gave to the Association his valuable library of old anatomical and medical books, and later made it the residuary legatee of a liberal bequest.

In 1857 came the turning point in Holmes' life. From then his time and thoughts were to turn more and more to literature, and less to science. The "Autocrat," and not the discourse on puerperal fever, numbers him with the immortals; though it is impossible to separate the poet from the scientist. His poetry and prose show the training of his mind in physiology and psychology, his medical addresses and writings show him as the scholar and the wit. Any discussion of his purely literary work is impossible here. From the time he became associated with James Russell Lowell (1857) in building the "Atlantic Monthly" upon the ruins of "Putnam's Magazine," his rise in fame was constant, rapid and permanent. His best known writings are: "The Autocrat of the Breakfast Table," 1857; "The Professor," 1860; "The Poet," 1872, and "Over the Teacups," 1890, besides many essays. His first volume of poems was issued in 1836; and other volumes in 1846, 1849 and 1850; "Songs in Many Keys," 1861; "Humorous Poems," 1865; "Songs of Many Seasons," 1874; "The Iron Gate," 1880; "Before the Curfew," 1888. In fiction, he gave us "Elsie Venner," 1861; "The Guardian Angel," 1865; "A Mortal Antipathy," 1885; "One Hundred Days in Europe," 1887. For biography he published "Memoirs of John Lothrop Motley," 1887; "Life of Emerson," 1884; "Pages from an Old Volume of Life," and "Medical Essays." Here are some verses which he read at a medical club supper about the year 1846:*

> "This evening hour, which grateful memory spares
> From evening toil and unrequitted care;
> These curling lips, these joy-revealing eyes,

* Boston Medical and Surgical Journal, Oct. 11, 1894.

These mirthful tones, re-echoing as they rise;
These friendly pledges on this festive shrine,
The glistening goblet and the flowing wine;
This genial influence which the coldest heart
Warms to receive and opens to impart:—
Mock the poor Art, who does her subjects wrong,
And steals from Pleasure all she wastes in song.
Yet since you ask this feeble hand to strew
Wreathes on the flowers and diamonds on the snow:
Take all it bears, and, if the gift offend,
Condemn the Poet,—spare, oh, spare, the friend.

"Yes, while I speak some magic wand appears,
Shapes the long past (Oh, say not happier) years.
Ye lawless fancies, yet untaught to know
The charms of reason, or the scourge of woe;
Ye boyish dreams, now melting into air;
Ye virgin forms, alas, no longer fair;
Ye scattered friends, with many a tear resigned,
Once all our own, now mingled with mankind,
Since, save in memory, ye appear no more
In the bright Present, let the Past live o'er.
Still in the heart some lingering spark remains—
You cannot chase it from the shrinking veins.
Grief comes too early, Pleasure ne'er too late.
Snatch the fair blossom whatsoe'er it state.
If youth still charm thee, mirth is justly thine;
If age has chilled thee—lo! the generous wine.

"Oh, thoughtless revellers, when you set my task
How little dreamed you of the toil you asked—
How shall I please you? I, a grave young man
Who fate is drudgery on "the useful plan."
How can I coax you, smooth you, comb you down,
And cheat your frontals of that awful frown?
Portentous scowl, which marks in every age
The blistering, clystering, tooth-extracting sage.
A verse too polished will not stick at all;
The worst back-scratcher is a billiard ball.
A rhyme too rugged would not hit the point,
Its loose legs wriggling in and out of joint.
Shall I be serious, touching, lachrymose,
Mix tears with wine and give you all a dose?
But well-filled stomachs have not room for grief,

"For sips and sighs—for porter and roast-beef.
Shall I be learned, and with punch and claw
Dig stumps of Greek from every Ancient's jaw?
But who quotes Cuvier when he feasts on snipe,
Or reads Gastritis when his wife cooks tripe?
Not all the wisdom of recorded time
Can change one tidbit to concocted chyme.
Not all the schools from Berkshire to the Nile
Can melt one sausage into milky chyle.
Nor all the Galens since Deucalion's flood
Change lifeless pudding into living blood.

* * * * * * * * * * *

"Our noble Art, which countless shoals invade,
Some as a science, many as a trade.
In every column quackery has its line;
From every corner stares the doctor's sign;
From every shore the straining vessel tugs
Ill-centered balsams, stomach-turning drugs;
The keels of commerce clear the farthest surge
Lest some old beldam want her morning purge.
The seaman wanders on his venturous route
To turn a baby's stomach inside out.
Rich were the Queen of yon hepatic isle
With half her subjects squander on their bile;
Rich were Van Buren could he pay his bills
With half his people waste on "Brandreth's Pills,"—
Or with their products fill his farmers' carts
With tare and tred for reproductive parts.

* * * * * * * * * * *

"Heaven surely ordered, on creation's morn,
This mighty law—that children must be born.
Hence came the science thou dost show so well
With white forefinger, Madame Lachapelle.
Hence came the forceps, hence the screw to pinch
The soul's own viscus down to half an inch.
Hence came the weapons which the embryos bore
Left in the lurch, their brains escaped before.
(A trivial change—since so oft we find
That babes grown up have left their brains behind.
Hence came the fillet, whence the infant wretch
Mistakes the midwife for her friend Jack Ketch.

Hence came the lever, which the toothless fry
Take for a crow bar, when the monsters pry.
Hence the scoop pinchers with the fang between
Skull-crushing Davis—thy divine machine.
Hence all the "claptraps" potent to extract
The hero, struggling in his closing act.

"So the stout fetus, kicking and alive
Leaps from the fundus for his final dive:
Tired of the prison where his legs were curled,
He pants like Rasselas, for a wider world.
No more to him there wanted joys afford
The fringed placenta and the knotted cord;

"No longer liberal of his filial thanks,
He drums his minutes on his mother's flanks.
But nobly daring seeks the air to find
Thro' paths untrodden, in spite of waves or wind.
Hush: decent Muse, and leave such things as these
To modest Maygrier and concise Dewees.

* * * * * * * * * * *

"Thus with the entrance of the first-born man
The reign of science o'er the earth began;
Nurse of his weakness, soother of his woes,
She waits and watches till his sorrows close.
Nor yet she leaves him when the undying mind
Flits from his clay and leaves the frame behind.

"If thou shouldst wonder that mankind must die
Ask the Curator of our Museum, Why?
Were man immortal, who had ever seen
The stomach, colon, kidneys, pancreas, spleen?
Each pickled viscus, every varnished bone,
Seducing schirrus and attractive stone,
Lost to the world, had never come to grace
Our well-filled phials in their padlocked case.
Unknown to fame had Morgagni sighed,
And Louis floated down oblivion's tide,
On Brunner's glands no cheering ray had shone,
And Peyer claimed no patche save his own.
Science, untaught her scalpel to employ,
Had seen no ileum since the days of Troy;

And man the ruler of the storms and tides,
Had groped in ignorance of his own insides.
Thus the same art that caught our earliest breath
Lives with our life and lasts beyond our death.
Man, ever curious, still would seek to save
Some wreck of knowledge from the waiting grave.
Yet, keen-eyed searcher into Nature's laws
Slight not the suffering while thou recks't the cause.
How poor the solace, when thy patients die
To tell the mourners ALL the reason why.
Love linked with knowledge crowns thy angel art,
Gold buys thy science;—Heaven rewards thy heart.

"Between two breaths, what words of anguish lie;
The first short gasp, the last and long-drawn sigh.
Thou who hast aided, with coercive thumbs,
The red-legged infant, kicking as it comes;
Thou who hast tracked each doubtful lesion home
With probe and scissors, knife and enteretome;
Short is the opening; short the closing scene;
But a long drama fills the stage between.
Nor deem it strange—since every reason flings
Its sun or cloud on life's unguarded springs;
Since song or science, love of fame or truth,
All feed like vampires on the brow of youth;
Since the red goblet shakes the hand that grasps,
And hot-cheeked beauty wastes the form she clasps—
One-half mankind should spend their time to make
The pills and draughts the other half must take.
Oh, fertile source of never-failing wealth,
Mysterious Faith, thou alchemist of health.
But for thy wand, how vainly should we strive
To cure the world and keep ourselves alive.
Not all the fruit the yellow harvest yields,
When the curved sickle sweeps the rustling fields;
Not all the stores the deep-sunk vessel brings,
When India's breezes swell her perfumed wings;
Not all the gems whose wild Auroras shine
Thro' the black darkness of Golconda's mine,
Can match the profits thou dost still dispense
To thy best favorites,—Ease and impudence;
Who find Golconda in a case of gout,
Or rich Potosi in a baby's clout.

* * * * * * * * * * *

"*Small* is the *learning,* which the patients ask,
When the grave Doctor ventures on his task.
To greet the Quack admiring hundreds come,
Whose wisdom centres in his fife and drum.
Why shouldst *thou study,* if thou canst obtain
A wig, a gig, an eye-glass or a cane?
Greenest of greenhorns; know that drugs like these
Are the best weapons to subdue disease.
Shouldst thou not flourish by enacting lies,
Step into print, good friend, and advertise;
And in the "Post," the "Herald," or the "Sun"
Thus let thine honest manifestoes run:
That great physician, learned Dr. C.,
F. R. S., Staff-Surgeon, and M. D.
Lately from London; now at number four
Left side of North St. (Don't mistake the door)
May be consulted for life's various ills:

"Where's also sold the patent "Pickwick Pills."
What grieves the Doctor is, that all mankind
To their own good should be so shocking blind.
He could not stand it, but relief imparts
The grateful feeling of a thousand hearts.
His fee is nothing; 'tis his conscious skill,
Backed by the virtues of the "Pickwick Pill,"
That prompts the Doctor to dispense his cure
To all mankind and also to the poor.
What is dyspepsia? When the humors vile
The cardiac sphincter closes on the bile.
What cures dyspepsia? Why the doctor's skill
(Consult by letter and enclose a bill).

* * * * * * * * * * *

"Of testimonies which have come in heaps
But two small cartloads now the doctor keeps.
They were too numerous for the public eyes;
Hence the small number which he now supplies.
John Smith, of Boston, aged thirty-five,
Is much surprised to find himself alive,
Which justly owing, as he thinks must be,
Half to his Maker;—half to Dr. C.,
Had a stuffed feeling; used to wake in starts;
Had wind and rumbling in his inward parts.

Had swelled stomach; used to vomit some;
Was often squeamish; thought his brains were numb;
Had fell away; could not digest his food;
Had tried all physic, nothing did him good.
In short, was dying with numerous ills,

CURED BY THREE DOSES OF THE 'PICKWICK PILLS.'

"The doctor's skill, the sluggard clergy owns,
As in the note from Reverend Judas Jones.
Dear Sir: The blessing of the Lord attend
You and your ointment called 'the loafer's friend.'
My worthy wife, the partner of my toils,
Like Job of old, has suffered from the 'boils;'
Some on her fingers, wherewithal she knits,
Some upon her person, whereupon she sits,
Which quite unfit her when her ail returns
To do her duties by her small concerns.
Since times are hard and earthly comforts dear,
And gospel harvests come but once a year,
With my good deacon I resolved to halve
One precious box of your unrivalled salve.
With heaven's kind blessing and one hearty rub
We chased away this leprous Beelzebub.
Enough was left to cure our warts and styes,
And six great pimples on my housemaid's thighs.
Please send three boxes, by the earliest hand,
To Judas Jones, your servant at command.
P. S. Your pills have cured my baby's fits;
I'll write particulars if the Lord permits.

"The following letter sent to Dr. C.,
Comes from Barrabas Waterpot, M. D.
Dear Sir: The duties which I owe mankind
Have made it proper that I speak my mind;
And while my breast an honest conscience fills,
I can but praise the patent 'Pickwick Pills.'
I have no interest in the pills at stake,
And never sell them, and but rarely take.
Fit for the welfare of a suffering race,
Their many virtues I now feebly trace;
When taken fasting they the strength maintain;
When on *full stomach* they deplete the brain.
One pill relieves the most drowning thirst;

Two keep one sober tho' he drink to burst;
One pill a week cures phthisis and the gout,
One-half a pill will keep the measles out;
Rubbed on the fingers they destroy the itch,
Worn next the skin,—lumbago and the stitch;
Tho' like a corkscrew they the bowels search,
A curious fact,—*they never work in church;*
Small children take them with advantage great,
And also ladies in a certain state.
In short, this medicine every want fulfills;
I give no physic but the 'Pickwick Pills.'
Please print this letter which of use may be,
(Signed) Barrabas Waterpot, M. D.

"Here's a small postscript Doctor C. left out
(Of small importance to the public, no doubt).
The pills sell briskly—twenty gross or more—
Send a fresh parcel to the grocer's store;
Put in more *jalap;* never mind expense,
Folks must be *griped* or *grudge the fifty cents.*
Put up three sizes; one three times as small,
For little brats; the big ones *kill* them all.
I want my pay, you poison-pounding knave,
Send me good bills,—how like the d—l you shave.

"All this well printed and with bigger type
Words like DYSPEPSIA, LIVER, HUMOR, GRIPE,—
Two solid columns in the 'Times' would fill,
And make thy fortune by the 'Pickwick Pill.'
But thou, poor dreamer, who hast rashly thought
To live by knowledge which thy bloom has bought,
Thou who hast waited with a martyr's smile,
Hope gently whispering—'Yet a while'—
Too proud to stoop thy noble aim,
Too poor to pay the price of fame;
Thou all unfriended, while a thousand fools
Vaunt their raw cousins reeking from the schools;
Go, scorn the art that every boon denys
Till age sits glassy in thy sunken eyes;
Go, scorn the treasury which withholds its store
Till hope grows cold, and blessings bless no more.

"Peace to our banquet, let us not prolong
Its dearest moments with my idle song.

This measured tread of evermarching rhyme,
Like clock-work, pleases only for a time.
Too long repeated, makes our hearts so sick
We cut the weights to stop its tedious click.
Let sweeter strains our opening hearts inspire,
The listening echoes tremble round the lyre.
Dance, Bacchus. Hours of labor come again
To lock the rivets of our loosened chain.
Shine, star of evening, with thy *steadiest* ray
To guide us homeward on our *devious* way."

It is hard to see how Holmes was able successfully to carry on such an amount of work in addition to his duties at the Medical School. His versatility was an unceasing marvel. It has been claimed that if he had patented his ingenious stethescope he would have been rich. He would never admit that he was growing old. At the Medical School his lectures were rearranged each year, and he was constantly abreast of the times. All this meant thought and effort, especially to Holmes, with his long-standing asthma. So he went on until October 5th, 1882, when he gave the first intimation of intention to sever his connection with the School. In a letter to S. Weir Mitchell he wrote:

"I have not told you that I am very soon to resign my professorship. I have been thinking of it for some time, and very lately received a proposal from my publishers so tempting that I could not resist it. I hold on for a couple of months to give the faculty and the Corporation of the University time to look round for some one to complete the courses I have begun. Thirty-five years here—this is my thirty-six course—two years Professor at Dartmouth,—that is long enough, isn't it? They say they don't want me to give up, but I had rather spend whatever days are left me in literary pursuits."

To Fordyce Barker he wrote:

"I am glad to look forward to rest from my official duties as Professor. I say look forward, for they want me to lecture a little longer, at any rate, and I shall hold on until about Thanksgiving time. I should have liked, on some accounts, to lecture two or three years longer. We have a grand new College building about five minutes walk from my house. My colleagues do not seem to be tired of me, and my duties have been made most agreeable to me in every respect. . . . I shall have a

freedom I shall be glad of, and shall write when I feel disposed—which, I think, will be pretty often when I have no routine duties to keep up—a steady drain on my vital resources."

The age of seventy-three years might justify any man for wishing to retire from duties as arduous and exhausting as teaching and lecturing, yet we find our genial teacher, essayist, poet, wit and physician, laying aside these duties so that he might take on others.

At a meeting of the Harvard Corporation, November 20th, 1882, it was voted: "That Dr. Holmes' resignation be accepted in accordance with his wishes; but that the University loses with great regret his services as a learned, faithful and interesting teacher; and his personal presence and influence as a distinguished man of letters." Holmes was made *Emeritus* Professor of Anatomy.

The following sonnet was written by him in 1882 for a meeting of the Harvard Club of New York:

"ALMA MATER."

"Yes, home is sweet! and yet we needs must sigh,
Restless until our longing souls have found
Some realm beyond the fireside's narrow bound
Where slippered ease and sleepy comfort lie,—
Some fair ideal form that cannot die,
By age dismantled and by change uncrowned,
Else life creeps circling in the self-same round,
And the low ceiling hides the lofty sky.
Ah, then to thee our truant hearts return,
Dear Mother, Alma Casta,—spotless, kind!
Thy sacred walls a larger home we find,
And still for thee thy wandering children yearn,
While with undying fires thine altars burn
Where all our holiest memories rest enshrined."

Oliver Wendell Holmes died in Boston, October 7th, 1894. The many expressions of love, admiration, respect and condolence which followed would easily furnish material for a memorial of the man. Here are a few from sources varied, yet all within the field of this writing:

"To say that in Dr. Holmes America has lost her greatest physician is not one of the exaggerations to which men are prompted in expressing their grief over a recent death. We have not in mind only his contributions to medical science and literature, which, although overshadowed by his work in general letters, were many and important, but we are thinking of that wider province of the physician that lies beyond the laboratory and the drug-shop, the hospital and the consulting-room.

"We doubt whether in the long period of Dr. Holmes' activity any other English writer has done so much for the health of the minds of his readers; and his readers embraced all classes. Rich and poor, old and young, learned and unlearned, found in his pages something that they could understand, and the understanding of which bettered them mentally and morally. And this highest praise that a writer can have, namely, that the best-equipped readers found the most profit and entertainment in his writings, is universally conceded to Holmes.

"We were about to say that his was a simple nature; and the statement would have been true in the one sense that the meretricious in literature or in life repelled him; but his intellect was subtle and complex as civilization. Science, art, nature, philosophy were all his, and all left their impress upon him. Cosmopolitan sympathy and experience modified and were modified by the effects of Puritan ancestry and old-time New England training. In his complex make-up there is no doubt that his medical studies and teaching exerted a dominant influence. In the felicitous poem read by Dr. Weir Mitchell to the College of Physicians of Philadelphia on the occasion of the presentation to that body of a portrait of Holmes, Minerva and Apollo are represented as contending for and at last agreeing to divide, the lad. But, unless we concede that medicine as well as poetry belongs to Apollo, we must hold Minerva to have obtained the 'biggest half' in the division.

"Dr. Holmes never lost sight of his profession, and never allowed the world to lose sight of it. Throughout his writings, from 'The Fly in the Stethoscope' to the good natured raillery at a too-exclusive specialism in 'Over the Tea-cups,' he did not hesitate to hit at its weaknesses and foibles; while, apart from the admirable characters in his novels, he has in many noble passages pictured the life and influence of the true, modest, self-sacrificing doctor in terms of the highest appreciation."

"His greatest work was his essay on 'The Contagiousness of Puerperal Fever,' read before the Boston Society for Medical Improvement in 1842, of which he subsequently wrote: 'When, by permission of Providence, I held up to the professional public the damnable facts connected with the conveyance of poison from one young mother's chamber to another's—for doing which humble office I desire to be thankful that I have lived, though nothing else good should ever come out of my life—I had to bear the sneers of those whose position I had assailed, and, as I believe, have

at last demolished, so that nothing but the ghosts of dead women stir among the ruins.'"

"The death of Oliver Wendell Holmes must necessarily appeal with particular force to all who follow, as he followed, the profession of healing. While the purely literary world is lamenting the loss of the brilliant essayest, the delicate poet, the spontaneous humorist, the ever-sympathetic, ever-appreciative colleague, we are lamenting in him the medical man of letters. In so doing we are not debarred from admiring sincerely, even fervently, his great and fascinating qualities, but it is in his character of a physician that he makes special appeal to us. And this is the more right that it is in the character of physician that he himself makes many of his most intimate claims upon the attention and affection of his readers. The medical men of letters are a comparatively small band. The names of Smollett, Thomas Browne and John Brown at once occur to us; Keats and Goldsmith both served an apprenticeship to our art; and more than one living physician is a good as well as a popular novelist; but the union of medicine and letters is rare. Oliver Wendell Holmes was not only an example of this rare class, but in many respects he was a unique example; for in him the physician—now as anatomist or physiologist, now as psychologist, now as diagnostician—was ever present and ever speaking. He wrote no book without drawing largely upon his scientific experience; he displayed in all his literary workmanship, in thought as much as in expression, an accurate tolerance—a capability of taking the large view, with a resolve to be correct about small things—that we make bold to say, as he would often proudly say, had been largely developed by his particular training; and many of his wittiest little parables and paraphrases—many of the most characteristic sayings of those three charming rulers of the breakfast-table—were the direct outcome of his medical learning.

"*Si sic omnes!* For the public nowadays is suffering from a surfeit of medicine in its literature. Heredity and the transmission of physiological or psychological taints; sexual problems; problems in mental pathology form the essence of the work of a large school of writers. Sometimes the work is well done and sometimes extremely ill done. Now and again the great romancer will by a few illuminating words supply a real contribution to the scientific side of psychology; more often we are asked to solace ourselves after the day's work with long-drawn questions pruriently put and left unanswered by a string of pompous deductions. And so we say: Ah, if all were like the Autocrat of the Breakfast table! Would that all our advanced novelists would recognize first, that it is necessary to know before instructing and to see before leading, if the ditch is to be avoided; and, second, that there is wisdom in restraint and an art in remaining silent—that furibund descriptions of animalism, if accurate, are inappropriate in general literature, and that to display to

common gaze a dissection of the morbid imaginings of the sick mind may be an act of positive indecency. Oliver Wendell Holmes was a man who knew. Whither he would lead, his readers might always be content to follow without fear of the ditch. His science was sound, his wisdom indubitable, and his powers of observation and introspection were the acutest. And how did he use them? Not by shirking the responsibilities laid upon him by his possession of exceptional knowledge, as great men have before now done through fear of giving offence; on the contrary, his whole work is pervaded by his particular learning. And not by persistently presenting to the mental eye the dissected body or the sick soul, the charnel house, the bordel, or the asylum; on the contrary, his multifarious writings are absolutely free from the taint of nastiness. Oliver Wendell Holmes used his beautiful endowments in the highest way for the good of all, neither burying his talents nor prostituting them. He was removed by a lovable, modest, sympathetic nature from all possibility of writing the harmful; he was removed by a true and highly cultivated artistic sense from the common error of spoiling a picture by overloading it with unnecessary details; lastly, and chiefly, he was removed by his assured place as a man of scientific education, undoubted learning, and equally undoubted literary genius from all temptation to medical or linguistic display. From this position, with the conscientiousness of the skilled workman and the unpremeditated charm of the poet, he poured out broad lessons of human sympathy and preached a genial, yet shrewd, gospel of kindliness."

"As a medical poet he is unique; and both in his poems and in his prose the medical training and intellectual bias stand for a good deal. I hope some one will do justice to this aspect of him. He sang the praises of Lowell in a noble poem. Who is to sing in a like manner his own?"

"The praise of Wendell Holmes, the writer, the charming poet, the inimitable *causeur,* the delightful humorist, whole wit *circum præcordia laudit,* is in the mouths of all men; his niche in the Temple of Letters needs no stone of our fashioning to complete it. The splendor of his literary fame, however, has somewhat dazzled the eyes of his more recent contemporaries to the excellence of the work which in his earlier days he did for his profession and for science. Any work done by Wendell Holmes was sure to be brilliant, but it is a striking proof of the versatility of his powers that his scientific work was as solid as if he had been the dullest Dryasdust that ever dissected the muscles of the back or counted the markings on the different members of the pediculus family. In a medical journal it is fitting that this aspect of Wendell Holmes' many-sided genius—which has, as was natural, received only imperfect recognition from most of our contemporaries—should be briefly dwelt upon."

"Proud as we are to think of him as a member of our profession, and proud as we are of his achievements in it, we realize that his great work in life had more to do with making people better spiritually than making them well physically. Physician by education, he devoted himself to practice and the acquisition and imparting of scientific knowledge. Poet by nature, he spent his leisure time and declining years in those writings which have so endeared him wherever they have been read. Philosopher by thoughtful study and love of his fellow-man, he made for many life's path less rugged by kind and philanthropic words, and when his own long path brought him toward life's foot-hills he was content and said, 'he should sorrow deeply if he had the idea he was to become helpless in body and mind.' This was spared him. He reached the end, 'eighty-five years young,' as he expressed it, and happily met death as a little child meets sleep, unconscious of fatigue, and only mindful of a day more full of pleasures than of pain."

"Dr. Holmes was, whilst his vigor lasted, always ready to respond with his pen to appeals for obituary notices of deceased friends and professional brothers of less fame than himself. These notices were always kindly, generous and graceful as well as just and discriminating. He has left behind him no enemies and hosts of warm admirers who during his life guarded not that 'ungenerous silence which leaves all the fair words of honestly-earned praise to the writer of obituary notices and the marble worker.' He himself needs no obituary. But we shall long continue to revive our recollections of those former days when he was with us."

Bibliography of Holmes' Writings on Medical and Scientific Subjects.

(In "Boston Medical and Surgical Journal.")

"An Introductory Lecture," delivered at the Massachusetts Medical College, November 13, 1847, vol. xxxviii, 1847, p. 384.

"Microscopic Preparations," vol. xlviii, 1853, p. 337.

"Lines Written for the Eighth Anniversary of the American Medical Association," vol. lii, 1853, p. 305.

"The Dental Cosmos (Review of)," vol. viii, n. s., p. 99.

"Valedictory Address to the Medical Graduates of Harvard University," March 10, 1858, vol. lviii, 1858, p. 149.

"Rip Van Winkle, M. D.: An After-Dinner Prescription taken by the Massachusetts Medical Society at their meeting held May 25, 1870," vol. lxxxii, 1870, p. 444.

"Address at the Commencement Exercises of the Dental Department in Harvard University," February 14, 1872, vol. lxxxvi, 1872, p. 331.

"The Physiology of Versification," vol. xcii, 1875, pp. 6-9.

"Joseph Warren, M. D." A Poem. Vol. xcii, 1875, p. 703.

"Letter on Dr. J. B. S. Jackson," vol. xcv, 1876, pp. 393-395.

"An Address delivered at the Annual Meeting of the Boston Microscopical Society," vol. xcvi, 1877, p. 601.

"Letter to Dr. George E. Ellis," vol. civ, 1881, p. 593.

"Poem written for the Centennial Anniversary Dinner of the Massachusetts Medical Society," June 8, 1881, vol. civ, 1881, pp. 577-580.

"Speech on occasion of the Presentation of a Portrait of Dr. J. B. S. Jackson to the Boston Medical Library Association," vol. civ, 1881, pp. 560-561.

(In "North American Review.")

"The Mechanism of Vital Actions," July, 1857.

(In "New England Quarterly Journal of Medicine and Surgery," Boston.)

"Contagiousness of Puerperal Fever," vol. i, 1843, p. 503.

(In "Proceedings of the American Academy of Arts and Sciences.")

"On the Use of Direct Light in Microscopical Researches," and a model by him of a newly-invented horizontal microscopical apparatus as figured, vol. ii, pp. 326-332.

(In vol. iv, pp. 373-375, the term "Reflex Vision" is proposed as a phrase proper to certain original optical experiments, an account of which is given.)

"Edward Stafford's Medical Directions written for Governor Winthrop in 1643, with Notes by O. W. Holmes." Boston. 1862.

"Teachings from the Chair and at the Bedside." An Introductory Lecture delivered before the Medical Class of Harvard University, November 6, 1867. Boston: David Clapp & Son. 1867.

"Talk Concerning the Human Body and its Management." Atlantic Almanac, 1868. (Dr. Holmes was joint editor of this annual with Donald G. Mitchell.)

"The Medical Profession in Massachusetts: A Lecture read at the Lowell Institute, January 29, 1869." Publications of the Mass. Hist. Soc. 1869

"The Young Practitioner: A Valedictory Address delivered to the Graduating Class of the Bellevue Hospital College, March 2, 1871." New York Medical Journal, April, 1871.

"The Medical School," the chapter on, in the Harvard Book, vol. i. Cambridge: Welch & Bigelow. 1875.

"Visions: A Study of False Sight." By Edward Hammond Clarke, M. D. With an Introduction and Memorial Sketch by Oliver Wendell Holmes, M. D. Boston: Houghton, Osgood & Co. 1878.

"Medical Libraries: An Address delivered at the Dedication of the Hall of the Boston Medical Library Association on December 3, 1878. Cambridge:" The Riverside Press. 1881.

"Medicine in Boston:" Additional Memoranda in Memorial History of Boston. Vol. iv, Chap. x. Boston: James R. Osgood. 1881.

Single Publications and Pamphlets.

"On Indigenous Intermittent Fever in New England;" on "Neuralgia;" on "Direct Exploration;" Boylston Prize Dissertations for the years 1836 and 1837. Dedicated to Pierre Cha. Alex. Louis, Doctor of Medicine of the Faculties of Paris and St. Petersburg. Boston: Little & Brown. 1838.

"Marshall Hall's Principles of the Theory and Practice of Medicine." First American Edition, revised and enlarged by Jacob Bigelow and O. W. Holmes. Boston. 1839.

"Homeopathy and its Kindred Delusions." Two Lectures delivered before the Boston Society for the Diffusion of Useful Knowledge. Boston: William D. Ticknor. 1842.

"The Position and Prospects of the Medical Student." An Address delivered before the Boylston Medical Society of Harvard University, January 12, 1844. Boston: John Putnam, Printer. 1844.

Report of the Committee on Medical Literature: Transactions of the American Medical Association. Vol. i, 1847.

"The Benefactors of the Medical School of Harvard University: with a biographical sketch of the late Dr. George Parkman." An introductory lecture delivered at the Massachusetts Medical College, November 7, 1850. Boston: Ticknor, Reed & Fields. 1850.

"Currents and Counter Currents in Medical Science." An Address delivered before the Massachusetts Medical Society at the Annual Meeting, May 30, 1860. Boston. Ticknor & Fields. 1860.

"Border Lines of Knowledge in Some Provinces of Medical Science." An Introductory Lecture delivered before the Medical Class of Harvard University, November 6, 1861. Boston: Ticknor & Fields. 1862.

"Sonnet written for the Annual Dinner of the Harvard Club, New York, February 21, 1882." Vol. cvi, 1882, p. 187.

"Medical Highways and Byways;" a Lecture delivered before the students of the Medical Department of Harvard University, May 10, 1882. Vol. cvi, 1882, p. 505.

"Farewell Address to the Medical School of Harvard University, Tuesday, November 28, 1882." Vol. cvii, 1882, p. 529.

"The New Century and the New Building of the Medical School of Harvard University." Vol. cix, 1883, p. 361.

Letter from Dr. Oliver Wendell Holmes to Dr. Fordyce Barker on his resignation of the office of President of the New York Academy of Medicine. Vol. cxii, 1885, p. 165.

Address before the Boston Medical Library Association at the formal presentation of his medical library, January 29, 1889. Vol. cxx, p. 129.

Editorial Remarks on Medical Highways and Byways (from Medical Times and Gazette, London). Vol. cvii, 1882, p. 331.

Editorial Remarks in Boston Medical and Surgical Journal. Dr. Oliver Wendell Holmes' Resignation of the Parkman Professorship of Anatomy in Harvard University. Vol. cvii, 1882, p. 426.

Account of his Farewell Lecture to the Students of the Harvard Medical School, November 28, 1882. (Presentation of a Loving Cup by the students and his letter to the donors.) Vol. cvii, 1882, p. 546.

A Reception to Drs. Holmes and Bigelow. Vol. cviii, 1883, p. 22.

A Toast from Dr. Fordyce Barker to Drs. Holmes and Bigelow. Vol. cviii, 1883, p. 22.

Appointment of Dr. Oliver Wendell Holmes Emeritus Professor of Anatomy in Harvard University. Vol. cviii, 1883, p. 46.

Resolutions of the Faculty of the Harvard University Medical School on the Resignations of Professors Holmes and Bigelow. Vol. cviii, 1883, p. 72.

"Sweet Holmes:" a stanza from London Punch on his resignation from Harvard University. Vol. cviii, 1886, p. 86.

The New York Dinner to Dr. Holmes. Vol. cviii, 1883, p. 378 and 379.

Presentation of a Portrait of Professor Holmes to the Harvard Medical School. Vol. cix, 1883, p. 404.

"New Facts about Dr. O. W. Holmes." Vol. cx, 1884, p. 334.

"Dr. Holmes in England." (From British Medical Journal.) Vol. cxiv, 1886, p. 626.

"Dr. Oliver Wendell Holmes" (Phoebo ante alias dilectus). Vol. cxv, 1886, p. 217.

Announcement of the Oliver Wendell Holmes Hospital, Hudson, St. Croix County, Wisconsin, 1888. (St. Paul, 1888, 15 pp. 8o.)

(In "Atlantic Monthly.")

"Homeopathic Domestic Physician." Vol. i, 1857, p. 250.

"Agassiz's Natural History." Vol. i, 1858, p. 320.

"Brief Expositions of Rational Medicine." Vol. ii, 1858, p. 736.

"Mothers and Infants, Nurses and Nursing." Vol. iii, 1858, p. 645.

"The Steroscope and the Stereograph." Vol. iii, 1859, p. 738.

"The Human Wheel, its Spokes and Felloes." Vol. xi, 1863, p. 567.

"The Great Instrument." Vol. xii, 1863, p. 637.

"Sex in Education" (Dr. Clarke). Vol. xxxii, 1873, p. 737.

"Prof. Jeffries Wyman." Vol. xxxiv, 1874, p. 611.

"Crime and Automatism." Vol. xxxv, 1875, p. 466.

"A Memorial Tribute" (to Dr. Samuel G. Howe). Vol. xxxvii, 1876, p. 474.

"Benjamin Pierce." Vol. xlvi, 1880, p. 824.

GEORGE HAYWARD.

George Hayward was graduated from Harvard College in 1809, and received the A. B. from Yale in the same year. He was graduated in medicine at the University of Pennsylvania in 1812. From the beginning of his career, Hayward showed a fondness for his profession and a high appreciation of its dignity and importance. Medicine and surgery had for him clear and distinct principles upon which there could be no compromise. He was always ready to assail dogma in medicine, and never hesitated to show his intense dislike for any form of empiricism. In temperament he was sanguine, and that added earnestness and energy to his character.

Hayward was one of the members of the private club including Channing, Bigelow, Gorham, J. C. Warren and Ware, which met weekly for the reading and criticism of papers offered for publication in the "New England Journal."

When Asiatic Cholera threatened Boston, the Councillors of the Massachusetts Medical Society appointed a committee (February 1832) to investigate the history of that plague and report upon the best mode of treatment, as well as upon the contageousness of the disease. Hayward was one of the committee, and their report became authoritative. In 1837, when Hayward was one of the consulting physicians of the city of Boston, he assisted in framing that "Report upon Smallpox" which embodies the treatment employed to-day in handling the contageous disease.

In 1830 he joined with John C. Warren and Hale in forming a private school, which lived eight years. In the meantime Harvard had established a professorship of the Principles of Surgery and Clinical Surgery, and at the same meeting, January 15, 1835, the Corporation elected Hayward to that chair. One of his prescribed duties was the holding of teaching clinics at the Massachusetts General Hospital. He

had already been appointed to the visiting staff of the Hospital, and was therefore in a position to undertake teaching. His connection with the introduction of ether in surgical operations is a well known tale in history. He did the first *major* operation ever done upon a patient under ether. He resigned his professorship at the Medical School on March 31, 1849. The Corporation voted, "That in accepting the resignation of Dr. Hayward as Professor of Surgery this Board is deeply sensible of the important services rendered the University by him, and hold in grateful recollection the successful exertions and liberal benefactions made by him to raise the character and promote the interests of the Medical School."

At the opening of the new building on North Grove Street, November 4, 1846, Hayward made the opening address. In the Massachusetts Medical Society he was Corresponding Secretary from 1832 to 1835, and President from 1852-1855, succeeding John Ware in the latter office. In 1837 he gave the Annual Address, his subject being "Some Diseases of the Knee Joint." In 1852 he was chosen a Fellow of Harvard College, and served until his death in October, 1863. In addition to such duties, he found time to take an active part in the affairs of the American Academy of Arts and Sciences. Few teachers in the Medical School showed a more kindly interest in students than did he,—though as teacher and surgeon he is now seldom quoted. At a meeting of the Corporation of Harvard College on October 10, 1863, the following resolutions were adopted:

"The Corporation of Harvard College have heard with deep regret the death of their colleague Dr. George Hayward. Others will record his eminent professional attainments and his devotion to every work of public and private charity. A child of the College, he was loyal to its interests through life. In his prime he was a faithful Professor in one of its departments of instruction, and in his later years he brought to its service in this Board an affectionate zeal, prudent counsel, and a large and varied

knowledge of men and affairs. Our intimate associations with him for a period of thirteen years, have enabled us to appreciate and entitle us to bear witness to his untiring devotion to the cause of education and sound learning."

There is a handsome bust of this good man in the possession of the University.

AUSTIN FLINT.

Austin Flint was born at Petersham, Massachusetts, October 20th, 1812. He was descended from a line of good doctors. His great-grandfather, Edward Flint, was a noted practitioner at Shrewsbury, Massachusetts; his grandfather, Austin Flint of Leicester, was a surgeon in the American Revolution; and his father, Joseph Henshaw Flint (H. U., M. D., Hon. 1825), was one of the best known physicians and surgeons of the Connecticut Valley.

Austin Flint studied at Amherst and Harvard, but was not graduated A. B. He was graduated at the Harvard Medical School in 1833. After practicing for three years at Northampton and in Boston, he moved to Buffalo (1836), where he remained until 1844. His writings had already attracted attention, and in 1844 he accepted the Professorship of the Theory and Practice of Medicine at the recently established Rush Medical College, Chicago. The New West was then too undeveloped for Flint's tastes, and he returned to Buffalo after one year's stay in Chicago. He next established the "Buffalo Medical Journal" (1845), and was its editor for the subsequent ten years.

In 1847 Flint, with James P. White and Frank H. Hamilton founded the Buffalo Medical College, now the Medical Department of the University of Buffalo. He was made Professor of the Theory and Practice of Medicine and of Clinical Medicine there, and was the leading teacher up to the time of his resignation in 1852. During the next four years he was

Austin Flint.

M. D. 1833.

Professor of Pathology and Clinical Medicine in a strong Faculty at Louisville, after which he again returned to Buffalo, accepting there the chair of Pathology and Clinical Medicine. During the winters of 1858-61 he filled the professorship of Clinical Medicine at the New Orleans Medical School, and was attending Physician at the Charity Hospital.

In 1856 (November 15th) the Corporation of Harvard College appointed Flint "to deliver such of the lectures on Theory and Practice of Medicine as may be agreed upon between him and Dr. Ware, the present incumbent." This was about the time that Flint was busy in the Buffalo School, and he never delivered the lectures at Harvard. Morrill Wyman agreed to help out during that winter, but Harvard lost an opportunity to add another great teacher and clinician to its corps.

In 1859 Flint moved to New York City, and accepted the double position of Professor of the Theory and Practice of Medicine and Visiting Physician at Bellevue Medical College and Hospital, and Professor of Pathology and Practical Medicine at the Long Island College and Hospital. He resigned the latter position in 1868. He was President of the New York Academy of Medicine from 1872 to 1885, resigning on account of a change in the "Code" sanctioning consultations with others than regular physicians. Flint was an active member of many leading American medical and scientific societies, and was a corresponding member of various similar European organizations. He was president of the American Medical Association (1884), and was one of the orators at three International Congresses (Philadelphia 1876, London 1881, Copenhagen 1884.) He was to have presided at the International Congress at Washington in 1887, but he died in New York, March 13, 1886.

Flint's distinction rests fully as much upon his published works as upon his teaching. Many of his writings were the accepted text-books upon the principles and practice of med-

icine. His greatest and most extensive treatise is the "Practice of Medicine," published in 1866; it ran through seven editions, with the enormous sale of forty thousand copies. Two of his writings, "Variations in Percussion and Respiratory Sounds," and "Clinical Study of the Heart Sounds in Health and Disease," won the first prize of the American Medical Association in 1852 and 1859. His "Physical Exploration and Diagnosis of Diseases Affecting the Respiratory Organs," and "A Practical Treatise Upon the Pathology, Diagnosis and Treatment of Diseases of the Heart" went to second editions. Among his later publications were "Essays on Conservatism;" "Medicine and Kindred Topics," "Phthisis; Its Morbid Anatomy, Etiology, Symptomatic Events and Complications, Fatality and Prognosis, Treatment and Physical Diagnosis, in a Series of Clinical Studies," "A Manual of Percussion and Auscultation," "Clinical Medicine, A Systematic Treatise on the Diagnosis and Treatment of Disease," "Physical Exploration of the Lungs by Means of Auscultation and Percussion" and "Medical Ethics and Etiquette." From such a list, and those are good books, one may judge of the man's power and value.

He was loved and respected by his fellows. No stronger proof of this is needed than his selection as the compromise candidate in the congress of 1877. Both parties to that bitter controversy accepted him, and he was a strong factor in bringing about an understanding. His Alma Mater may pride herself on his long and useful career as a teacher, writer and practitioner of medicine. For forty years Flint contributed largely to the medical literature of the country. Many of his first papers appeared in the "Buffalo Medical Journal," which owed much to his writings. From 1848 to 1850 he published articles on Diabetes, the Pathology of Typhoid Fever, on the Epidemic Cholera in Buffalo, on Serous Effusions Into the Arachnoid Cavity, on Pleuro-pneumonitis complicated with Pericarditis, and on Fifty-two cases of Typhoid fever. These papers were

followed in 1852 by clinical reports on Continued Fever and on Variations of Pitch in Percussion and Respiratory Sounds and their Application to Physical Diagnosis; in 1853, by Clinical Reports on Dysentery, and on Chronic Pleurisy. The method of his writings was characteristic and instructive, and won him a great reputation. The long series of years thus devoted to the study and publishing of purely clinical reports gave him a breadth and keenness of observation which show in those more extensive works which remain associated with his name. The permanency of these latter works demonstrates the wisdom of laying a sound foundation before venturing upon book writing;; *verbum sap.,* ye moderns.

In all his writings, Flint showed himself straight-forward and honest. What he did not know he would not state; when he felt that he needed help in his writings, he was ready to ask it, and he always gave full credit for the assistance secured. One sees this in his prefaces, in which he gives William H. Welch the credit for the chapters on pathological anatomy in his more recent works. His writings do not aim at extensive original research, but rather endeavor to popularize the latest and best in medical thought. His works on percussion and auscultation are his best original productions. In his writing as in his teaching, he was modest, clear, painstaking and accurate. He used to say, "It is a positive enjoyment for me to write, and when the work of the day is done, I sit in my office and frequently write until eleven, twelve, one, and perhaps two o'clock in the morning, before I feel tired enough to go to bed." "The Lancet" called him "The Watson of America." As a teacher Flint had a high reputation. He taught general medicine, and developed a systematic presentation of his subject. Both his clinical and didactic lectures were prepared with care, and never were extemporaneous.

In 1862 Flint became a member of the New York Academy of Medicine; he was its orator in 1868, its vice-president in

1871 and 1872, and its president in 1873 and 1874. On his induction into office, Peaslee said: "We have always found you the high-minded and sympathetic man, and the genial gentleman, as well as the finished scholor, the distinguished author and the skilful practitioner." Flint remained a member of the Academy until a short time before his death. In the fracas over the "Code," although a strong party man, as every man of prominence in the profession then was, he could not be classed as a bitter partisan. His aim was to promote peace, harmony, and brotherhood; failure in that aim caused him the keenest mortification. In 1883 he was elected president of the American Medical Association, and it was his suggestion which led to the meeting of the International Medical Congress in this country in 1887. He was to have delivered the presidential address, as Samuel D. Gross's successor, had not death intervened. He was the first American to deliver the address in medicine before the British Medical Association (August, 1886).

Flint's ambition to raise the standard of medical education was early shown in the New York convention to organize the American Medical Association, May 5th, 1846, when his committee reported, "That it be recommended to all the colleges to extend the period employed in lecturing from four to six months." Forty subsequent years of labor failed to realize these hopes of his younger days. In one of his last works, "Medicine in the Future," he shows almost prophetic sight:

> "The meditations of a medical practitioner, whose retrospection extends over half a century, may naturally be expected to revert to the past . . . If our retrospection extend half a century, it is worth while to inquire: How will the present appear in a retrospective view at the end of the next fifty years?"

From such a hight of observation he looked forward as well as backward, and predicted,

"That the history of medicine will have a steady acceleration in progress; that knowledge with reference to anatomy, histology and chemistry will advance; that our senses will be aided and augmented; that hearing will be vastly improved by means of microphonic stethoscopes; that a judicious bloodletting will be revived, and that the lancet will again find a place which it lost through over-use; that bacterial etiology will be established and revolutionize the treatment of certain diseases; that the little understood functions of the spleen and liver, the thyroid body, the lymphatic glands, the suprarenal capsules offer problems which will form 'a vast and fruitful field for future clinical research.'"

EMINENT ALUMNI

(CONTINUED)

CHAPTER XXX.

EMINENT ALUMNI (CONTINUED).

GEORGE CHEYNE SHATTUCK.

George C. Shattuck is a strong link in the chain of medical men bearing the Shattuck name. With a father eminent as a physician, and a grandfather typical of the best in the medicine of his generation, he was in turn the father of two sons not unknown to the profession.

The subject of this memoir was born in Boston, July 22, 1813. Educated at the famous Round Hill School at Northampton and at the Boston Latin School, he entered Harvard College, and was graduated in the class of 1831. During these formative years Shattuck was under influences of the highest character. His father was the personification of benevolence, his mother the ideal of charity. The output of the Northampton School in Shattuck's class alone shows the sort of character fostered there. J. M. Forbes, Wendell Phillips, J. L. Motley, J. T. Morse, T. G. Appleton, Francis Boott, John Morrison, F. W. Brune and J. C. Brune were some of the members of his class both there and at College;—men who were distinguished later in American history and in American literature. The following words from his own address at the founding of St. Paul's School reflect something of Shattuck's character:

"Physical and moral culture can best be carried on where boys live with, and are constantly under the supervision of, the teachers, and in the country. Outdoor exercise is thus secured. Green fields and trees, streams and ponds, beautiful scenery, flowers and minerals, are educators.

The things which are seen are very valuable, and may be used to teach of Him Who made them, and thus of the things unseen. Religious teaching and training for beings such as we are, is all important. The things of this world are engrossing; but boys ought to be trained not only for this life, but so as to enter into and enjoy eternal and unseen realities. The life of this world is short and uncertain. To live well here, in the fear and love of God, and with love to our fellow-men, is not easy, and teachers and instructors, who have learned and practiced the arts of so living and passing through this world as not to lose the things eternal, are essential to the success of a boarding school for boys."

With Shattuck these were not idle words; they came from his heart.

After graduating from Harvard, he entered the law school in obedience to the wish of his father, who thought the youth unequal to the strain of medical practice. After he had studied a year at the law school, "a perfect martyr to his fidelity," his father consented to his taking up medicine, and in 1835 he received the M. D. from Harvard. After some time spent in further study at Bowdoin, and with Professor Lincoln at Burlington, he passed three years in Paris and London. In Paris he was an enthusiastic admirer of Louis, and early became one of his favorite pupils. His translation of Louis' work on Yellow Fever was one of his achievements during this course of study. Upon the suggestion of Louis, Shattuck visited the Fever Hospital in London, to study the symptoms and course of typhoid and typhus fevers, and to gather material for use by Louis in his work on the differential diagnosis of these two diseases, which were then often confounded. In this research Shattuck was aided by Stillé of Philadelphia, a fellow student who had had exceptional opportunities to observe the course of typhus fever at home, an experience not to be found in the Paris hospitals. These two young men, Shattuck and Stillé, presented a paper at the Paris Observation Society in 1838, and demonstrated the differential diagnosis of the two diseases.

With such exceptional equipment for the practice of med-

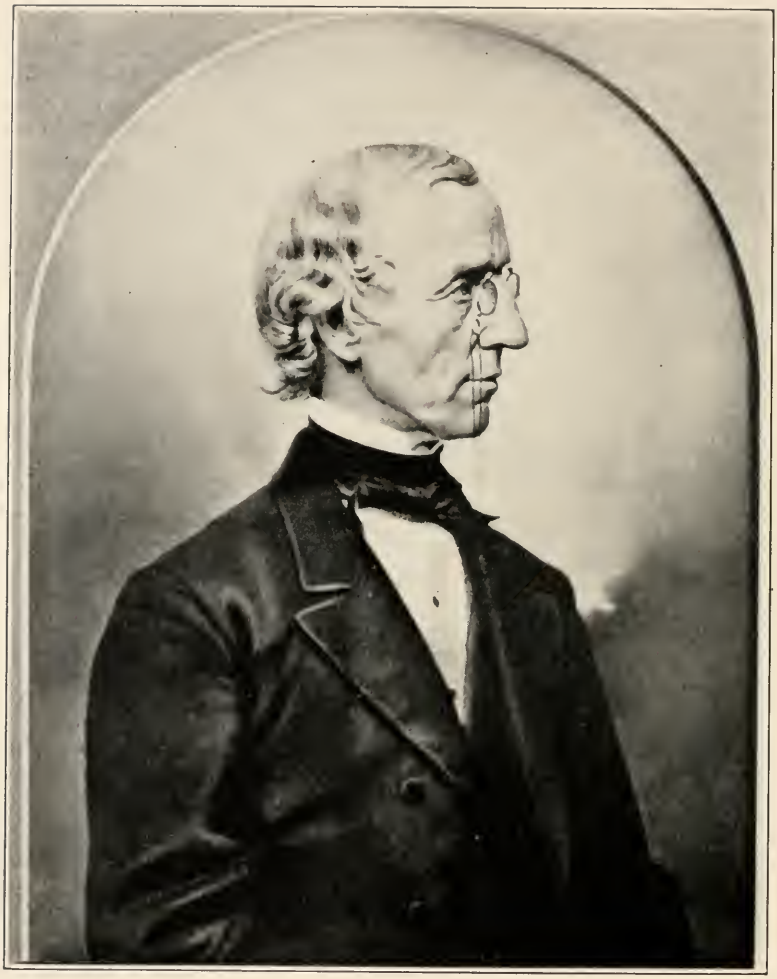
icine, Shattuck returned to Boston, and became associated with his father, then a leader in the medical and social circles of the city. On April 9th, 1840, he married, in Baltimore, Anne Henrietta Brune, a sister of his college classsmate.

Upon the resignation of Oliver Wendell Holmes from the visiting staff of the Massachusetts General Hospital, Shattuck was appointed to the vacancy. This position he held until 1885, when he was made consultant to the Hospital. At a meeting of the Corporation of Harvard College, December 30, 1854, Jacob Bigelow resigned the Professorship of Materia Medica, and the Lectureship in Clinical Medicine. It was thereupon voted to establish a Professorship of Clinical Medicine in place of the Lectureship, and Shattuck was selected to fill the place. He resigned this Professorship January 22, 1859, and at the same meeting he was elected Hersey Professor of Theory and Practice of Physic as successor to John Ware. He held this position until November 29, 1873. He was Dean of the Medical School from 1864 to 1869. To these different offices Shattuck brought a keen understanding of human nature, admirable judgment, rare unselfishness, and a firmness of purpose which won respect. In the council of his associates he was a constant advocate of devotion to the interests of the School they served, as above all self-seeking. A fellow teacher says of Shattuck: "Several of the School's best teachers would have been lost to it without his persistent advocacy of their appointment, and in more than one instance places were made in his own department for those who could not be provided for in other departments." As a teacher he was practical. He established clinical conferences in the teaching of medicine, and was an advocate of the benefits to be derived from quiz classes among the students, outside their regular lectures. For the encouragement of this latter plan he provided rooms in his own office building. "Had he been supported in these efforts, the school might have had an earlier

development in this important direction." That Shattuck's interest in the promotion of medical education was genuine and unselfish, is further attested by his sacrifice of time, strength and money, in delivering for many years an annual course of lectures on physiology and hygiene at Trinity College, and at St. James College, Maryland. He gave these lectures without compensation.

In his daily professional life one sees his marked religious convictions. He was indeed the good physician. The belief he professed at church on Sunday he practiced daily in his hospital wards, and in the homes of the sick and poor. So much were these principles a part of him that he seriously considered taking orders. He was regarded as the foremost layman in the Episcopal Church in Massachusetts. Samuel Eliot says: "He was a member of almost every society board in his diocese, a delegate to every diocesan and every general convention, a trustee of the General Theological Seminary, and of other bodies beyond the diocese." Few instances occur to me in which there is a more perfect blending of the spiritual, mental, and social nature; and the beauty of it all is, that he seemed to be unconscious of its workings, so modest and simple was his faith. Of the many objects of his generosity two flourish vigorously,—St. Paul's School, and the Faribault School. St. Paul's School at Concord, New Hampshire, was founded in 1856. It was established in accordance with Shattuck's well grounded belief that boys should be trained in body, mind, and soul. It will be recognized that he built upon good foundations; for the little beginning in the house which was his summer home has grown to the great institution which he had the satisfaction of seeing before his death. Besides St. Paul's School, Shattuck founded a school which bears his name at Faribault, Minnesota;—a beacon light in the new north-west.

Besides his publication of the translation of Louis "On



JEFFRIES WYMAN.

A. B. 1833; A. M.; M. D. 1837.
Hersey Professor Anatomy 1847-1874.

Yellow Fever," Shattuck gave the annual discourse before the Massachusetts Medical Society in 1866, on "The Medical Profession and Society." He was president of the Society in 1872-1874. He was a member of the American Academy of Arts and Sciences, vice-president of the American Statistical Association, Honorary Fellow of the Philadelphia College of Physicians, member of the Paris Society for Medical Observation and of the New England Historic-Geneological Society. As a companion and friend his lively sense of humor and his genuine hospitality were very charming. He died in Boston, on March 22, 1893. The College of Physicians of Philadelphia passed the following resolution:

"By Dr. Shattuck's earnest devotion to the duties and interests of the profession for which he felt an hereditary attachment, and which he illustrated by a long career of fruitful teaching and practice and by the uprightness, unselfishness and simplicity of his life and his genial and benevolent disposition, he exerted a beneficial influence while he lived, and has left behind him the memory of a character worthy of admiration, and which should serve as an example and encouragement to all who aspire to be held in honor and affectionate remembrance."

JEFFRIES WYMAN.

Jeffries Wyman was born in the town of Chelmsford, Massachusetts, near what is now the city of Lowell, on the 11th of August, 1814. His father, Rufus Wyman, previously mentioned in these pages as the first physician to the McLean Asylum for the Insane, was a partner of the well known John Jeffries, of Boston, after whom the son was named.

Jeffries Wyman was fitted for college at Phillips Academy, Exeter, and entered Harvard in 1829. While at college he was an earnest student, and showed such ability in the natural sciences that his college room was known as a curiosity shop of anatomical preparations. There you might see tadpoles and frogs skillfully dissected and neatly arranged in a man-

ner which marked the budding scientist. He was graduated in 1833, and after four years of study under John C. Dalton and his own father, received his medical degree from Harvard in 1837. During those four years also, he had been a house pupil at the Massachusetts General Hospital. Howbeit, his taste was for research and teaching rather than for the practice of his profession.

Wyman's first appointment was as Demonstrator (1838) to John C. Warren: "He was unwilling to tax the limited resources of a father to whom he was fondly attached, and was living at this time with an economy which it would be painful to think of, if we did not remember how many of the heroes of knowledge have eaten the bread of poverty, and found in it the nourishment of steady endeavor and serene self possession." From the proceeds of a course of lectures given in 1841 before the Lowell Institute, of which he had been Curator, he was enabled to pursue his studies in Europe, giving his whole attention to human and comparative anatomy, and to natural history and physiology. He was a student of Flourens, Magendie, Louget, De Blainville, Valenciennes, Dremeril, Isidore St. Hilaire, and Milne-Edwards. While in London in 1842 he was called back to this country by his father's death, June 22, 1842. In 1843 Jeffries Wyman was appointed Professor of Anatomy and Physiology in the Medical Department of Hampden Sidney College, Richmond. Upon the resignation of John C. Warren, in 1847, the Hersey Professorship of Anatomy at Harvard was established in place of the Hersey Professorship of Anatomy and Surgery, and was at the same time removed from the Medical School to Cambridge. Jeffries Wyman was elected, April 3, 1847, to this new professorship. To illustrate his lectures he began the formation of the Museum of Comparative Anatomy and Physiology which has since remained a valuable legacy to science and a monument to his name. In it are collected speci-

mens almost innumerable in variety, type, stage of development, normal and abnormal, of animal and human life. No cheap rubbish found a place on those shelves; each specimen had its special object, and all were systematically arranged so as to carry out some idea of the collector. Every specimen labeled by the same hand speaks for painstaking labor.

During his college course Wyman had become the victim of a pulmonary affection which kept him an invalid, and eventually caused his death. In his many journeys seeking health, and to escape New England winters, he was not idle. Each excursion was employed in some scientific investigation and in adding some new treasure to his life's work.

In 1866 George Peabody of London founded at Harvard an archaeological and ethnological museum which to-day bears the name of Peabody. From the funds then available there was created the position of Curator, and Jeffries Wyman was asked to accept the office. He shared with Louis Agassiz the labors of the Faculty of the Museum of Comparative Zoölogy. From 1856 until 1870 he held the office of president of the Boston Society of Natural History. He joined this Society in October, 1837. He was Recording Secretary 1839-41, Curator of Icthyology and Herpetology 1841-47, of Herptology 1847-55, of Comparative Anatomy 1855-74. In 1857 he was chosen president of the American Association for the Promotion of Science, but did not serve. He was councillor in the American Academy of Arts and Sciences, and a member of the Faculty of the Museum of Comparative Anatomy. His death occurred at Bethlehem, New Hampshire, on September 4, 1874.

As a physician there is nothing to say concerning the life and labors of Jeffries Wyman. Like his colleagues, Agassiz and Gray, he early found that a life's best work may be done in channels other than those first entered. A gentle manner, a pleasant smile, keen observation, logical reasoning, a love

of work, and the power to express the truth of his convictions marked him as a man who would have succeeded in practice. A life of practice, however, does not always satisfy the scientific mind. Jeffries Wyman had natural gifts of acuteness and accuracy of observation, deep penetration, fine power of definition, and a modesty and generosity which admirably fitted him for the labor of his choice. He developed such traits at an early age. Here is the tribute of a fellow-student* at Exeter when Wyman was a lad of fourteen,—playful, frank, generous, a child of nature rather than a student of books:

"He would take long rambles in the woods, and go into the water and a-fishing, and draw funny outline-sketches in his school-books, and whittle out gimcracks with his penknife, and pitch stones or a ball farther and higher than anybody in the academy, when he ought to have been studying his lessons. Only a few years ago, when we were chattering together about our early life at Exeter and in college, he said in his frank and simple way, with a laugh and half a sigh, 'Bowen, I made a great mistake in so neglecting distasteful studies, though you may think I made up for it by following the bent of my inclination for catching and dissecting bull-frogs; I have been obliged, even of late years, to study hard on some subjects distinct from and yet collateral with my special pursuits, which I ought to have mastered in my boyhood.' The boy was very like the man, only with age, as was natural, he became more earnest, persistent and methodical."

Wyman's earliest publication is "On the Indistinctness of Images Formed by Oblique Rays of Light," published in 1837.† His contributions to science during the remaining thirty-seven years of his life embrace a wide range of subjects:§ Anatomy, human and comparative; physiological observations; microscopical researches; paleontological and eth-

* Professor Francis Bowen.

† "Boston Medical and Surgical Journal. Sept. 1837.

§ Catalogue of Scientific Papers compiled and published by the Royal Society of London in the year 1863 contains 64 papers by Professor Wyman, and four others with associates.

nological studies of fossils and relics; notices of the habits of animals; fossil rain-drop impressions; and upon questions relating to the planes and angles of the cells of bees. In his "Observations on Crania," as well as in his description of the arrangement of the spiculae of bone in the neck of the femur, are valuable contributions to histology and comparative anatomy. The drawings in these, as well as the various illustrations used in his other works, exhibit skill and clearness of a high order. His description of the brain and skull of Daniel Webster, and his original account of a fracture of the two lower lumbar vertibrae dependent on their anatomical peculiarities, have practical interest. In the Webster murder trial his evidence relating to bones which had been submitted to great heat, and his restoration of the fragments, is a masterpiece of medico-legal testimony. It was no small honor to have Holmes say of him: "It need hardly be said that, while he did not concentrate his attention chiefly on human anatomy, few of those who teach that branch alone are as thoroughly masters of it as he was."†

Wyman's convincing exposition of the true nature of the so-called sea-serpent, *Hydrarchus Sillimani*, made him famous outside of the profession. In comparative anatomy his treatise on "The Nervous System of Rana Pipiens," and on "The Embryology of Raia Batis" are notable. Under this head one observes his papers on the gorilla, which owes to him its famous name and introduction to the scientific world; papers on the eye and organ of hearing in the "blind fishes" of the Mammoth Cave of Kentucky; on the passage of nerves across the median line; on a thread-worm in the brain of the snail-bird.

In physiological research his long series of experiments on

† Memoir of Professor Jeffries Wyman," by Oliver Wendell Holmes. Massachusetts Historical Proceedings, vol. xiv, from which much of this sketch is taken.

the formation of infusoria in boiled solutions of organic matter contained in hermetically-sealed vessels was an important contribution to biogenesis. Other contributions were his observations on the development of mould in the interior of eggs; the effects of heated water on living organisms; the effect of light on the development of tadpoles; his contrivance for measuring the velocity and force of ciliary movements, and his ingenious explanation of the mechanism of the tibiotarsal joint in the ostrich. His great work in this department was the "Description of a Double Foetus." His article on the symmetry and homology of limbs was the first of a long series of similar papers by various observers since that time. From his physiological papers one learns something of his natural history work. In 1857 he visited Dutch Guiana in order to study the method of gestation of certain species of fishes there. In "Notes on the Cells of the Bee" one finds him controverting much that hitherto had been generally accepted. As Curator of the Peabody Museum he carefully arranged, labeled and classified that great variety of specimens illustrating every grade of change through which the human form has passed. This work occupied many of his later years.

We have seen in the story of the Medical School the appreciation of Wyman by one of Boston's generous citizens, Thomas Lee. Other men helped the College directly by contributing collections for the museum. All unite in describing Jeffries Wyman as a man of the most amiable and unselfish disposition, given neither to jealousy nor disputation, and with a natural modesty which often was a barrier to the recognition of his merits. Few scientists and lovers of their kind have left a sweeter memory to posterity than has this physician.

One should mention especially Wyman's course of twelve lectures on Comparative Physiology, delivered in 1849 before the Lowell Institute. These were illustrated with that clear-

ness, method and soundness which came to be characteristic of him as a teacher. His brother, Morrill Wyman, says of him:

"He early showed an interest in natural history. When less than ten years old he spent half his holidays in solitary walks along the banks of the Charles River and the margin of the creek near the Asylum, to pick up from the sedge anything of interest that might be driven ashore. It was seldom that he returned from these walks without something either dead or alive as a reward of his search. In college the same preferment continued, and although he did not neglect the prescribed course, he made many dissections and some skeletons, especially one of a mammoth bull-frog, once an inhabitant of Fresh Pond, which was a subject of much interest to his classmates and is now, I believe, in the Museum of Comparative Anatomy. He early commenced drawing, but with very little regular instruction;—he also, when ten or twelve years old, painted on a panel with house paints a portrait of himself which was something of a likeness, but deficient in proper tints; the nearest approach he could make to the color of his hair was—green. His facility in sketching in after life was remarkable; he drew anatomical subjects with great accuracy and rapidity. His drawing upon the blackboard in illustrating his lectures, was most effective. His diagrams for his lectures to the undergraduates of Harvard College were nearly all drawn and colored by his own hand."

As president of the Natural History Society he is thus spoken of: "He presided with the gentleness and courtesy so characteristic of him; he was always ready with some fact from his carefully arranged storehouse to confirm or disprove statements made before the Society. He was patient of ignorant contradictions, sure of final approbation; never captious; never annihilating his tyro antagonist, as he easily could, by the weight of his scientific blows. His benign countenance many a time has checked the rising excitement of hot discussion." Alexander Agassiz has written of Wyman: "He never took part in any controversy. Unless he could add something of importance to the memoirs of his predecessors, he never allowed himself to print his observations if they were mere confirmations." Holmes adds, "Professor Wyman

would have been more famous if he had been less modest. Whether it be true or not that the world knows not its greatest men, it certainly knows very little of many of its best men; nothing at all of its best women. * * * Professor Wyman did a man's work with a woman's patience, meekness, fidelity, and noiseless efficiency. * * * He was too good a man for any creed to confiscate his virtues to its private exchequer." The spirit which pervaded all his scientific work is summed up in this aphorism, "No single experiment in physiology is worth anything." As a teacher Wyman was simple and unpretentious and clear; he rarely failed to convince his hearers. D. Humphreys Storer said of him: "I never knew a gentler, purer, nobler spirit. As a brother I loved him, and I mourn him."

Upon the death of Jeffries Wyman, the Corporation of Harvard University voted:

"That the President and Fellows desire to record their sense of the great loss which the University has sustained in the death of Professor Wyman, and to express their sympathy with the family and friends in their sudden bereavement.

"They recall with affectionate respect and admiration the sagacity, patience and rectitude which characterized all his scientific work, his clearness, accuracy and conciseness as a writer and teacher, and the industry and zeal with which he labored upon the two admirable collections which remain as monuments to his rare knowledge, method and skill.

"They commend to the young men of the University this signal example of a character, modest, tranquil, dignified and independent, and of a life simple, contented and honored."

The following list of Wyman's writings has been compiled from the Royal Society's list, with additions from F. W. Putnam and A. S. Packard:

1. "On the Indistinctness of Images formed by Oblique Vision." Boston Medical and Surgical Journal. Sept., 1837.

2. "On Fossil Bones from Georgia and Burmah, and a Recent Elephant's Tooth from Singapore." American Journal Science, xxxvi, 1839, pp. 385-386.

3. "Note on a Collection of Fossil Bones from Athens." Am. Jour. Sci., July, 1839; Proc. Boston Soc. Nat. Hist., 1839.

4. "Remarks on the Worms in Measly Pork." Am. Jour. Sci., July, 1839; Proc. Boston Soc. Nat. Hist., 1839.

5. "Remarks on a Bat, *Molossus ater*," etc., from Surinam. Am. Jour. Sci., July, 1839. Proc. Boston Nat. Hist. Soc., 1839.

6. "Notice of the Tooth of a Mastodon." Am. Jour. Sci., xxxix, 1840, pp. 53-54.

7. "On the Anatomy of *Tebennophorus carolinensis*." Boston Proc. Nat. Hist. Soc., i, 1841-44, pp. 154-155; Boston, Jour. Nat. Hist., iv, 1843-44, pp. 410-415.

8. "On the Anatomy of *Otion cuvieri Leach*." Proc. Boston Soc. Nat. Hist., 1840. Am. Jour. Sci., xxxix, p. 182. June, 1840.

9. "On a Species of Filiaria in the Lungs of a Sheep." Proc. Boston Soc. Nat. Hist., 1840. Am. Jour. Sci., xxxix, p. 183. Oct., 1840.

10. "Report on *Nautilus Umbilicatus*." Proc. Boston Soc. Nat. Hist., Feb. 19, 1840; Am. Jour. Sci., xxxix, p. 185. Oct., 1840.

11. "On Buried Wood, Unio, etc., in River Sand at Lowell." Proc. Boston Soc. Nat. Hist., July 15, 1840; Am. Jour. Sci., xl, p. 388. March, 1841.

12. "Note on the Cranium of a Seal (*Stenorhynchus leptonyx*) from the South Pacific." Proc. Boston Nat. Hist. Soc., Jan. 20, 1841; Am. Jour. Sci., xl, p. 390. March, 1841.

13. "Notice of the Howling Monkey (Simia seniculus)." Am. Jour. Sci., xl, 1841, pp. 387-388.

14. "On the Anal Pouches of the Skunk (*Mephitis Americana*)." Boston, Proc. Nat. Hist. Soc., i, 1841-44, p. 110.

15. "On the Sternum of a Male Trumpeter Swan (*Cygnus buccinator*)." Boston, Proc. Nat. Hist. Soc., i, 1841-44, p. 119.

16. "On the Microscopic Structure of the Teeth of the Lepidosteus and their Analogies with those of the labryinthodonts" (with a plate). Boston Proc. Nat. Hist. Soc., i, 1841-44, pp. 131-132. Am. Jour. Sci., xlv, 1843, pp. 359-363; London Physiol. Jour., 1843-44 (?).

17. "Review of Vogt's Embryologie des Salmones." Am. Jour. Sci., xlv, pp. 211-214. June, 1843.

18. "Notice of the Zoology of New York." By J. E. DeKay. Am. Jour. Sci., xlv, pp. 397-399. Sept., 1843.

19. "Notice of Agassiz's Monographies and Echinodermes Vivans et Fossiles." Am. Jour. Sci., xlv, pp. 399-400. Sept., 1843.

20. "On the Anatomical Structure of *Gladina truncata*," Say. Boston, Proc. Nat. Hist. Soc., i, 1841-44, pp. 154-155; Boston Jour. Nat. Hist., iv, 1843-44, pp. 416-421.

21. "Description of a Blind Fish from a Cave in Kentucky." Am. Jour. Sci., xlv, 1843, pp. 94-96.

22. (With Thomas S. Savage.) "Observations on the External Characters, Habits and Organization of the *Troglodytes Niger*," Geof. Boston Jour. Nat. Hist., iv, 1843-44, pp. 362-376, 377-386.

23. "On *Echinorhynchus Nodosus.*" Proc. Boston Soc. Nat. Hist., Jan. 4, 1843.

24. "On a Rotifer and Tardigrades." Proc. Boston Soc. Nat. Hist., Feb. 1, 1843.

25. "Linguatula from a Boa." Proc. Boston Soc. Nat. Hist., March 1, 1843.

26. "Ascarides from Cyclopterus." March 1, 1843.

27. "Description of a New Species of Torpedo." Proc. Am. Acad. Arts and Sciences. April 25, 1843.

28. Annual address as president of the Boston Society of Natural History. May 17, 1843.

29. "On *Spongia Fluviatilis.*" Proc. Boston Soc. Nat. Hist. Sept. 4, 1844.

30. (With Thomas S. Savage.) "Notice of the External Characters, Habits and Osteology of *Troglodytes gorilla*," a new species of ourang from the Gaboon river. Boston Jour. Nat. Hist., v, 1845-47, pp. 417-422; Ann. Sci. Nat., xvi (Zool.), 1851, pp. 176-182; Boston, Proc. Nat. Hist. Soc., ii, 1845-48, pp. 245-248; Am. Jour. Sci., viii, 1849, pp. 141-142.

31. "On the Spiculae of Actinia." Boston, Proc. Nat. Hist. Soc., ii, 1845-48, pp. 51-52.

32. "*Linguatula Armillata* and *L. Clavata.*" Boston, Proc. Nat. Hist. Soc., ii, 1845-48, p. 59; Boston, Jour. Nat. Hist., v, 1845, pp. 255-296.

33. "On the Fossil Skeleton recently exhibited in New York as that of a Sea Serpent under the name of Hydrarchos Sillimani." Boston, Proc. Nat. Hist. Soc., ii, 1845-48, pp. 65-68.

34. "On the Fossil Cranium and Lower Jaw of an Extinct Rodent." Boston, Proc. Nat. Hist. Soc., ii, 1845-48, pp. 138-139.

35. "A New Species of Troglodytes." Silliman Jour., v, 1848, pp. 106-107.

36. "On Two Malformed Cods' Skulls." Boston, Proc. Nat. Hist. Soc., iii, 1848-51, pp. 178-179.

37. (With James Hall.) "Notice of the Geological Position of the Cranium of the *Castoroides ohiocensis;*" also an anatomical description of the same. Boston Jour. Nat. Hist., v, 1845-47, pp. 385-401; Bibl. Univ. Archives, ix, 1848, pp. 165-167.

38. (With E. N. Horsford.) "On Valerianate of Morphia." Am. Assn. Proc., 1849, pp. 92-93.

39. Twelve lectures on Comparative Anatomy. Delivered at the Lowell Institute, Boston, January and February, 1849.

40. "A Description of Two Additional Crania of the Enge-ena" (*Troglodytes gorilla*, Savage and Wyman) from Gaboon, Africa. 1849. Boston, Proc. Nat. Hist. Soc., iii, 1848-51, p. 179; Am. Jour. Sci., ix, 1850, pp. 34-45; Edinb. New Phil. Jour., xlviii, 1850, pp. 273-286.

41. "On the Foot of a Species of Musk" (Moschus). Boston, Proc. Nat. Hist. Soc., iii, 1848-51, p. 203.

42. "On the Jet from the Blow-holes of Whales." Boston, Proc. Nat. Hist. Soc., iii, 1848-51, p. 228.

43. "On some Fossils from the Mississippi Alluvium at Memphis." Boston, Proc. Nat. Hist. Soc., iii, 1848-51, pp. 280-281; Am. Jour. Sci., x, 1850, pp. 56-64.

44. "On the Embryo of *Balaena mysticetus*." Boston, Proc. Nat. Hist. Soc., iii, 1848-51, p. 355.

45. "Notice of the Cranium of the Ne-hoo-le, a new species of manatee (*Manatus nasutus*), from West Africa." 1849. Am. Jour. Sci., ix, 1850, pp. 45-47; Proc. Am. Acad. of Arts and Sciences.

46. "Notice of Remains of Vertibrated Animals found at Richmond, Va." Am. Jour. Sci., x, 1850, pp. 228-235.

47. "Effect of the Absence of Light on the Development of Tadpoles." Proc. Boston Soc. Nat. Hist. April, 1853.

48. "On the Shell and Sternum of the *Trionyx ferox*." Boston, Proc. Nat. Hist. Soc., iv, 1851-54, p. 10.

49. "On the Spinal Cord of Bats." Boston, Proc. Nat. Hist. Soc., iv, 1851-54, p. 35.

50. "On the Development of Distomata." Boston, Proc. Nat. Hist. Soc., iv, 1851-54, pp. 65-66.

51. "On the Brain and Spinal Cord of the Lump-fish." Boston, Proc. Soc. Nat. Hist., iv, 1851-54, pp. 82-83.

52. "On the Crania of Indians." Boston, Proc. Nat. Hist. Soc., iv, 1851-54, pp. 83-84.

53. "On the Sudden Bursting and Scattering of Seeds of the Capsule of the Common Garden Balsam." Boston, Proc. Nat. Hist. Soc., iv, 1851-54, pp. 106-107.

54. "Results of Microscopic Examination of the Structure of the Brain and Spinal Cord in Frogs." Boston, Proc. Nat. Hist. Soc., iv, 1851-54, p. 107.

55. "On the Anatomy of *Carcharias Obscurus*." Boston, Proc. Nat. Hist. Soc., iii, 1851-54, pp. 123-124.

56. "On the Brain of *Lophius Americanus*, Cuvier." Boston, Proc. Nat. Hist. Soc., iv, 1851-54, pp. 149-151.

57. "On the Eye and the Organ of Hearing in the Blind Fishes" (*Amblyopsis spelaeus*, Dekay) of the Mammoth Cave. Boston, Proc. Nat. Hist. Soc., iv, 1851-1854, pp. 395-396; Am. Jour. Sci., xvii, 1854, pp.

258-261; Boston Proc. Nat. Hist. Soc., v, 1854-56, pp. 18-19; Muller's Archiv, 1853, pp. 574-576.

58. "Description of the Post-mortem Appearances in the Case of Daniel Webster." Am. Jour. Med. Sci., Jan., 1853.

59. "Notes on the Remains of *Dendrerpeton acadianum* from the Coal-measures of Nova Scotia." Geol. Soc. Jour., ix, 1853, pp. 64-66.

60. "Anatomy of the Nervous System of *Rana pipiens.*" 1852. Smithsonian Contrb., v, 1853.

61. "Description of the Interior of the Cranium and of the form of the Brain of *Mastodon giganteus.*" Silliman Jour., xv, 1853, pp. 48-55.

62. "Observation on the Development of the Surinam Toad." (*Pipa Americana*) Am. Jour. Sci., xvii, 1854, pp. 369-374; Boston, Proc. Nat. Hist. Soc., v, 1854-56, pp. 13-14.

63. "On the Electrical Organs of *Torpedo occidentalis.*" Boston, Proc. Nat. Hist. Soc., v., 1854-56, pp. 21-22.

64. "Researches on the Structure of the Heart and the Physiology of the Respiration in the Menobranchus and Batrachians." Boston, Proc. Nat. Hist. Soc., v, 1854-56, pp. 51-52.

65. "On the Development of *Anableps gronovii.*" Boston, Proc. Nat. Hist. Soc., v, 1854-56, pp. 80-81; Boston Jour. Nat. Hist., vi, 1857, pp. 432-443.

66. "Parasitic Plant on the Common House-fly." Boston, Proc. Nat. Hist. Soc., v, 1854-56, p. 90.

67. "On the Vagus of Tadpoles." Boston, Proc. Nat. Hist. Soc., v, 1854-56, pp. 119-120.

68. "Observations on Hybernating Insects." Boston, Proc. Nat. Hist. Soc., v, 1854-56, p. 157.

69. "Remarks on the Foetal Zygaena." Boston, Proc. Nat. Hist. Soc., v, 1854-56, p. 157.

70. "On the Wing of the Pin-tailed Ducks" (*Anas acuta.*) Boston, Proc. Nat. Hist. Soc., v, 1854-56, p. 169.

71. "On the Formation of Rain Impressions in Clay." Boston, Proc. Nat. Hist. Soc., v, 1854-56, pp. 253-254; Am. Jour. Sci., xxi, 1856, p. 175.

72. "On Footprints Discovered by Prof. H. D. Rogers." Boston, Proc. Nat. Hist. Soc., v, 1854-56, pp. 258-259.

73. "Dissection of a Black Chimpanzee" (Troglodytes niger.) Boston, Proc. Nat. Hist. Soc., v, 1854-56, pp. 274-275.

74. "Observations on Scaphiopus." Boston, Proc. Nat. Hist. Soc., v, 1854-56, pp. 382-83.

75. "On the Development of the Dorsal Cord in the Alewife." Boston, Proc. Nat. Hist. Soc., v, 1854-56, pp. 394-395.

76. "Notice of Fossil Bones from the Red Sandstone of the Connecticut River Valley." Am. Jour. Sci., xx, 1855, pp. 394-397.

77. "Description of some instances of Nerves passing across the Middle line of the Body."

78. "Note on the Teeth of an Elephant discovered near Zanesville, Ohio." Am. Assn. Adv. Sci. Proc., 1856 (pt. 2), pp. 169-172.

79. "On the Batrachian Reptile from the Coal Formation." Am. Assoc. Adv. Sci. Proc., 1856 (pt. 2), pp. 172-173.

80. "On Raindrop Marks." Silliman Jour. xxi, 1856, p. 145.

81. "Memoir of Dr. John C. Warren." Boston, Proc. Soc. Nat. Hist., Dec. 17, 1856.

82. "Examination of the Bagre." Proc. Boston Soc. Nat. Hist., Dec. 16, 1857.

83. "Account of some Fossil Bones collected in Texas." Boston, Proc. Nat. Hist. Soc., vi, 1856-59, pp. 51-54.

84. "Description of a Cyclopean Pig." Boston, Proc. Nat. Hist. Soc., vi, 1856-59, pp. 380-382; also March 18, 1863.

85. "Species of Fishes from the Surinam River." Proc. Boston Nat. Hist. Soc., Sept. 16, 1857.

86. "On the Cancellated Structure of some of the Bones of the Human Body." 1849. Boston, Jour. Soc. Nat. Hist., vi, 1857, pp. 125-140.

87. "On Some Remains of Batrachian Reptiles discovered in the Coal Formation of Ohio." Silliman Jour., xxv, 1858, pp. 158-164.

88. "Account of the Dissection of a Human Foetus. Proc. Boston Soc. Nat. Hist. Feb. 3, 1858.

89. "Results of some Examinations of a large number of Foetal Pigs." Proc. Boston Soc. Nat. Hist. April 7, 1858.

90. "On Several Parasites found in the American Deer."

91. "Remarks on the Death of Dr. Francis W. Cragin." Proc. Boston Soc. Nat. Hist. Sept. 15, 1858.

92. "Observations on the Shedding of the Antlers of the American Red Deer." Proc. Boston Soc. Nat. Hist. Oct. 19, 1859.

93. "Observations on the Habits of a species of Hornet (Vespa) which builds its nest in the ground." Boston Proc. Nat. Hist. Soc., vii, 1859-61, pp. 411-418.

94. "Account of the Collection of Gorillas made by Mr. Du Chaillu." Proc. Boston Soc. Nat. Hist. Jan. 4, 1860.

95. "On some Unusual Modes of Gestation in Batrachians and Fishes." Am. Jour. Sci., xxvii, 1859, pp. 5-13; Canadian Naturalist, v, 1860, pp. 42-49 Newman's Zoologist, xviii, 1860, pp. 7173-7179.

96. "On Two Parasites." Proc. Boston Soc. Nat. Hist. April 18, 1860.

97. "On the Poison Apparatus of the Rattlesnake." Proc. Boston Soc. Nat. Hist. May 16, 1860.

98. "On a Fossil from the Southwest Frontier of the United States." Proc. Boston Soc. Nat. Hist. Sept. 19, 1860.

99. "On a Partially Double Pig." Proc. Boston Soc. Nat. Hist. Feb. 20, 1861.

100. "On the Mode of Formation of the Rattle of the Rattlesnake." Proc. Boston Soc. Nat. Hist. March 6, 1861.

101. "On the Presentation to the Society by Dr. William J. Walker of the Estate Recently Occupied by him." Proc. Boston Soc. Nat. Hist. Aug. 1861.

102. "On the Bones of a Gorilla recently obtained in Western Equatorial Africa." Proc. Boston Nat. Hist. Soc. Oct. 2, 1861.

103. "On the Bones of a Supernumerary leg from a Goose." Proc. Boston Soc. Nat. Hist. Nov. 20, 1861.

104. "Dissection of a Hottentot." Proc. Boston Soc. Nat. Hist. April 2, 1862.

105. "On Larvæ of *Dactylethra capensis*." Proc. Boston Soc. Nat. Hist. Sept. 17, 1862.

106. "On the Reproduction of Lost Parts in Planaria." Proc. Boston Soc. Nat. Hist. Sept. 17, 1862.

107. "On Eggs of Salamanders." Proc. Boston Soc. Nat. Hist. Oct. 15, 1862.

108. "On a Remarkable Case of Poisoning. Proc. Boston Soc. Nat. Hist. Oct. 15, 1862.

109. "On the Development of the Human Embryo." Proc. Boston Soc. Nat. Hist. Dec. 3, 1862.

110. "Experiments on the Formation of Infusoria in Boiled Solutions of Organic Matter, enclosed in hermetically sealed vessels and supplied with pure air." Am. Jour. Sci. xxxiv, 1862, pp. 79-87; Chemical News, vi, 1862, pp. 109-112; Jour. Microsc. Soc., iii, 1863, pp. 109-120; Proc. Boston Soc. Nat. Hist. May 22, 1862.

111. "On Two Cases of Monstrosity in Serpents." Proc. Boston Soc. Nat. Hist. Jan. 21, 1863.

112. "On Localization of species." Proc. Boston Soc. Nat. Hist. May 20, 1863.

113. "On the Sea-serpent." Proc. Boston Soc. Nat. Hist. June 3, 1863.

114. "On the Mode of Impregnation of the Ova in Pomotis." Proc. Boston Soc. Nat. Hist. June 17, 1863.

115. "On Amphioxus." Proc. Boston Soc. Nat. Hist. Dec. 2, 1863.

116. "Description of a 'White Fish' or 'White Whale' (*Beluga borealis*) Lesson." Boston, Jour. Nat. Hist., vii, 1863, pp. 603-612.

117. "Observations on *Pentastoma* (Linguatula Rudolphi), *armillata*, Wyman, which infests the lungs of the *python sebæ* of Africa." Boston, Proc. Nat. Hist. Soc., ix, 1863, pp. 179-181.

118. "Observations on the Cranium of a Young Gorilla." Boston, Proc. Nat. Hist. Soc., iv, 1863, pp. 203-206.

119. "On the Mechanism of the Tibio-tarsal Joint of the Ostrich." Boston, Proc. Nat. Hist. Soc., ix, 1863, pp. 220-221.

120. "Observations recently made on an Amœba." 1863. Proc. Boston Soc. Nat. Hist., ix, 1865, pp. 281-283; Ann. Mag. Nat. Hist., xiv, 1864, pp. 394-395.

121. "On the Development of Skates, and especially of *Raia batis.*" 1863. Proc. Boston Soc. Nat. Hist., ix, 1863, pp. 334-335; Ann. Mag. Nat. Hist., xiv, 1864, pp. 399-400; Am. Acad. Mem., ix (pt. 1), 1867, pp. 31-44.

122. "On the Skeleton of a Hottentot." 1863. Proc. Boston Soc. Nat. Hist., ix, 1865, pp. 352-357; Anthropol. Review, iii, 1865, pp. 330-335.

123. "On Reptilian Bones from the New Red Sandstone at Middlebury, Conn." Proc. Boston Soc. Nat. Hist. June 1, 1864.

124. "On Malformations." Boston, Proc. Soc. Nat. Hist. Oct. 19, 1864.

125. "On Indian mounds of the Atlantic Coast." Proc. Bost. Soc. Nat. Hist., Nov. 2, 1864.

126. "On Accommodation of the Eye." Proc. Bost. Soc. Nat. Hist. Feb. 1, 1865.

127. "On the Power of Vibrio, &c., to resist the action of boiling water." Proc. Bost. Soc. Nat. Hist. Feb. 1, 1865.

128. "On the Formation of Ripple Marks." Proc. Bost. Soc. Nat. Hist. Sept. 20, 1865.

129. "On the Human Arterial System." Proc. Bost. Soc. Nat. Hist. Nov. 15, 1865.

130. "On the Reproduction of lost parts in Animals." Proc. Boston Soc. Nat. Hist. Jan. 17, 1866.

131. "Dissection of a Young Pigeon." Proc. Bost. Soc. Nat. Hist. June 20, 1866.

132. "On the Distorted Skull of a Child from the Hawaiian Islands." Proc. Bost. Soc. Nat. Hist. Oct. 17, 1866.

133. "Development of Moulds in the Interior of Eggs." 1865. Proc. Boston Soc. Nat. Hist., x, 1866, pp. 41, 97-98.

134. "On the Fossil Bones recently collected near Rio Bamba, South America." By Dr. C. F. Winslow. 1865. Proc. Boston Soc. Nat. Hist., x, 1866, pp. 105-107.

135. "Description of a Double Fœtus." Boston Med. & Surg. Jour., March 29, 1866.

136. "Description of an Anencephalous Fœtus with unusual malformation." Boston Med. & Surg. Jour. June, 1866.

137. "Notice of Observations on Respiration in the Chelonia." By S. Wier Mitchell, M. D., and George N. Morehouse, M. D.

138. "Notice of Richard Owen's Monograph of the Aye-aye, with remarks on the Origin of Species."

139. "Account of some Irregularities noticeable in the Cells of the Hive-bee." 1865. Proc. Boston Soc. Nat. Hist., 1866, pp. 234-235.

140. "Observations and Experiments on Living Organisms in heated water." Am. Jour. Sci. xliv, 1867, pp. 152-169.

141. "Measurements of some Human Crania." Proc. Bost. Soc. Nat. Hist. Nov. 20, 1867.

142. "Examination of the Animals of the New England Shell Heaps." Proc. Boston Soc. Nat. Hist. Dec. 4, 1867.

143. "Account of the Shell Mounds of Florida." Proc. Boston Soc. Nat. Hist. April 17, 1867.

144. "Account of the Life and Scientific Career of Dr. A. A. Gould." Proc. Boston Soc. Nat. Hist. May 1, 1867.

145. "Description of the Shell Heaps at Salisbury, Mass." Proc. Boston Soc. Nat. Hist. May 15, 1867.

146. "Destruction of a Male Spider by the Female." Proc. Boston Soc. Nat. Hist. Sept. 18, 1867.

147. "Account of a Visit to an Indian Shell Heap near Mount Desert, Me." Proc. Boston Soc. Nat. Hist. Sept. 18, 1867.

148. "On the Flint Implements from Northern Europe." Proc. Boston Soc. Nat. Hist. Oct. 2, 1867.

149. "Shell Heaps on Goose Island, Casco Bay, Maine." Proc. Boston Soc. Nat. Hist. Oct. 2, 16, 1867.

150. "On the Occurrence of Eels in the Abdominal Cavity of the Cod." Proc. Boston Soc. Nat. Hist. Jan. 15, 1868.

151. "On the Inscription of the Dighton Rock." Proc. Boston Soc. Nat. Hist. Dec. 2, 1868.

152. "On *Nautilus pompilius.*" Proc. Boston Soc. Nat. Hist. Dec. 16, 1868.

153. "Notes on the Cells of the Bee." 1866. Proc. Boston Soc. Nat. Hist. Jan. 17, 1866. Proc. Am. Acad. Arts and Sci., Boston, vii, 1868, pp. 68-83.

154. "An Account of Some Kjœkkenmœddings, or Shell Heaps in Maine and Massachusetts." American Naturalist, i, 1868, pp. 561-584.

155. "On the Morphology of the Leaves of the Pitcher-plant, and especially of Sarracenia." 1866. Proc. Boston Soc. Nat. Hist., xi, 1868, pp. 246-278.

156. "On the Symmetry and Homology in Limbs." 1867. Proc. Boston Soc. Nat. Hist., xi, 1868, pp. 246-278.

157. "Observations on Crania." Proc. Bost. Soc. Nat. Hist., xi, 1868, pp. 440-462.

158. "On the Fresh-water Shell Heaps of the St. John's river, East Florida." American Naturalist, ii, 1869, pp. 393-403, 449-463.

159. "On a Thread Worm (*Filaria anhingæ*) infesting the brain of the Snake Bird" (*Plotus anhinga.*) 1868. Proc. Boston Soc. Nat. Hist.,

xii, 1869, pp. 100-104. Monthly Microscopical Jour., ii, 1869, pp. 215-216.

160. "On the Head of a Crocodile, *C. acutus*, obtained in the Miami river." Proc. Boston Soc. Nat. Hist. May 19, 1869.

161. "On the Existence of a Crocodile in Florida." Am. Jour. Sci., xlix, 1870, pp. 105-106.

162. "Experiments with Vibrating Cilia." Am. Naturalist, v, 1871, pp. 611-616 Monthly Microscopical Jour., vii, 1871, pp. 80-81.

163. "On the Brain of *Didelphys Virginiana*." Mem. Boston Soc. Nat. Hist., ii, 1872, pp. 151-154.

164. "Change of Habit" (in cows, etc., grazing under water in Florida.) Am. Naturalist, viii, p. 237. April, 1874.

165. "Human Remains in the Shell Heaps of the St. John's river, East Florida. Cannibalism." Am. Naturalist, viii, p. 403-414. July 1, 1874.

166-173. First Seven Annual Reports of the Trustees of the Peabody Museum of American Archaeology and Ethnology. Cambridge, 1868-74.

174. "Remarks on Cannibalism among the American Aborigines." Proc. Bost. Soc. Nat. Hist. May 20, 1874.

175. "Fresh-water Shell Mounds of the St. John's river, Florida. Fourth memoir. Peabody Academy of Sci. Salem, Mass. 1875. pp. 94, pl. i-ix.

MORRILL WYMAN.

Morrill Wyman was born at Chelmsford, Massachusetts, July 25, 1812, and was the second son of Rufus Wyman (A. B. 1799; M. B. 1804). Morrill Wyman and his brother Jeffries were in College together, both graduating from Harvard in the class of 1833. Soon afterwards, Morrill Wyman entered the office of William J. Walker, of Charlestown, a leading surgeon of Massachusetts in his day. Later he studied at the Harvard Medical School, whence he and his brother again were graduated together in 1837. After this he was house-pupil at the Massachusetts General Hospital, where he served for one year, and then began practice at Cambridge in 1838. There he practiced until he was more than eighty years of age. In 1839 Wyman married Elizabeth Aspinwall Pulsifer, the daughter of Captain Robert S. Pulsifer, a Boston ship-master.

It is difficult to discuss separately the two brothers, Jeff-

ries and Morrill Wyman. Although they chose different lines of work in medicine, both exhibited the strong qualities of mind which characterized their father. Devotion to work was a notable trait in these three representatives of the Harvard School. The father established a standard for humane treatment of the insane which has since become recognized as best for that class of unfortunates; the elder son devoted his life to comparative anatomy, while the younger carried into his large and active practice a steadfast love for his work. With him, progress was life-long. Educated in the old school long before the more modern scientific discoveries, he kept abreast of the times, while always conspicuous for his devotion to the medical classics. The interest in scientific questions also he maintained up to the time of his death.

In 1846 Wyman published a volume of 400 pages on ventilation, a treatise founded upon a careful review of the existing knowledge of the subject as well as upon many new and valuable experiments of his own. This book was an authority for many years. His most important contribution to medical science was made in 1850. For some years before that, he had been considering the possibility of finding a substitute for the old Hippocratic thoracentesis which was the surgical treatment for pleural effusions. On February 23, 1850, by means of an exploring needle and canula attached to a stomach pump, he removed a large quantity of fluid from the chest of a patient suffering distressingly from an effusion. This operation was repeated a few days later with great success, after which the patient made a good recovery. On April 17 of that year, H. I. Bowditch, who had been carrying on the same line of research, though independent of Wyman, asked the latter to operate upon a patient of his (Bowditch's) in the town of Woburn. Bowditch was immediately convinced of the value of the operation and described the procedure in the April number of the "American Journal of the Medical Sci-

ences," 1852. In this article he gave full credit to Wyman for priority. In his subsequent writings, Bowditch firmly established the simple method of paracentesis in place of the more difficult and serious operation of Hippocrates.

In 1853 John Ware asked the Corporation of Harvard for an Adjunct Professor. Accordingly, on August 27 of that year, Morrill Wyman was appointed Adjunct Hersey Professor of Theory and Practice. This position he held until October 25th, 1856, when a difference of opinion among the members of the Faculty resulted in his resignation. In 1863 he delivered the annual address before the Massachusetts Medical Society. His subject was "The Reality and Certainty of Medicine," an excellent supplement to Holmes' 1860 address,* "Currents and Counter-currents in Medical Sciences." In 1872 Wyman published a volume on the two forms of hay-fever, an affection of which he was a victim annually. In 1875 he was elected an Overseer of Harvard College, and served until 1887, his Alma Mater in the meantime (1886) conferring upon him the LL. D. He was a founder of the Cambridge Hospital, and invented a system of individual ventilation for each bed. His motto for the hospital was "Man tends, God mends." He was a member of the American Academy of Arts and Sciences, and of the Societies for Medical Improvement in Cambridge and in Boston. He was for many years Consulting Physician to the Massachusetts General Hospital, the Cambridge Hospital, and the Adams Nervine Hospital. He died on January 31, 1903.

CHARLES EDOUARD BROWN-SEQUARD.

Charles E. Brown-Séquard was born in Mauritius Island in 1817, and was the son of Edward Brown, of Philadelphia. His mother was a French lady by the name of Séquard.

* Annual discourse, Massachusetts Medical Society.

He was educated in Paris, and was graduated Bachelor of Letters from the University there in 1838, receiving his degree of Bachelor of Science in 1839. His medical studies were pursued at the Ecole de Médecine, from which he received the M. D. in 1846. From the time of his graduation he devoted himself to the study of physiology exclusively. One may mention his experiments and investigations on the conditions and functions of the constituents of the blood, on animal heat, on the spinal column and its relations to diseases, on the muscular system, on the sympathetic nerves and ganglia, on the effect of the removal of the supra-renal capsule, etc., etc. Soon after his graduation he become a Fellow of the Royal College of Physicians, London, and was for several years head of the London Hospital for the paralyzed and epileptic. In 1855 he was appointed Professor of Physiology in the Medical College of Virginia, and on June 11, 1864, the Corporation of Harvard established in the Medical School the Professorship of the Physiology and Pathology of the Nervous System, to which chair Brown-Séquard was elected. This position he held until December 28, 1867. He then returned to Paris, where he held the chair of Comparative and Experimental Pathology at the Ecole de Médecine from 1869 to 1871. In 1873 he settled in New York, where he practiced until 1878; then he succeeded Claude Bernard as Professor of Experimental Medicine at the Collége de France.

During his frequent visits to this country, Brown-Séquard lectured at length on his discoveries and methods of treatment, especially in obscure diseases of the spinal column and nervous system. In 1889 he announced the discovery of the "Elixir of Life," indicating a process of rejuvenation by means of the subcutaneous injection of a certain testicular secretion. He received many prizes from the French Academy of Science, and was the author of many works on his specialty. His "Lectures on the Physiology and Pathology of the Nervous

HENRY J. BIGELOW.

A. B. 1837; A. M.; M. D. 1841; LL. D. 1882.
Professor of Surgery 1849-1882.
Emeritus 1882-1890.

System," 1860, and "Paralysis of the Lower Extremities," 1860, are the best known of his works. He was editor of the "Journal de la Physiologie de l'Homme et des Animaux," also of the "New York Archives of Scientific and Practical Medicine." He was a member of the American Academy of Sciences. He died in Paris, on April 2, 1894.

HENRY JACOB BIGELOW.

Henry J. Bigelow was born in Boston on March 11, 1818. He was a son of that Jacob Bigelow, first Professor of Materia Medica in the Medical School, and Rumford Professor of the Application of Science to the Useful Arts, in the Academic department of the University. From his father, Henry J. Bigelow inherited great physical and mental vigor. From his mother (Mary Scollay Bigelow) he received a strength of character, a certain gentleness of nature, and a capacity for work which made him a leader among men, an opponent to vivisection, and a fighter of that strength which will not admit defeat. At an early age he showed remarkable ingenuity in mechanics and a fertility in inventiveness which stood by him through life.

Bigelow entered Harvard College in 1833, when he was fifteen years old. During his course at Cambridge he was a member of many clubs and societies, and took part in the freshman rebellion of 1834, as well as in other "events" which brought with them the penalty of being "rusticated," and "prohibited from all connection with the town of Cambridge until the Saturday before Commencement." But he was assigned "a part" in the Commencement exercises at his graduation in 1837.

Bigelow early made up his mind to study medicine and to be a surgeon. This decision shows that self-willed determination which was characteristic. His father had an assured

position in the practice of medicine; his father's friends, especially James Jackson and Oliver Wendell Holmes, were anxious to help the son, but the young man would have his own way. The very difficulties pointed out seemed rather to encourage him, and, when they remonstrated, "your father is a medical, not a surgical practitioner. You want to forsake your best chance, and try to practice in *that* corner of the room, when all your interests and opportunities are with him, over in the other corner!" Bigelow answered emphatically: "I'll be damned if I won't be a surgeon!"

After studying medicine with his father and later at Dartmouth with Holmes, who was then the Professor of Anatomy and Physiology there, he was appointed house-pupil at the Massachusetts General Hospital (1838-39). While at Dartmouth, Bigelow developed pulmonary symptoms, which sent him to Cuba, whence he went to Paris. He did not drop his studies during this absence, and was qualified to receive his M. D. at Harvard in 1841. He went back to Paris immediately for further study, and later to London.

Here's a letter from him at the age of twenty-four:

"Paris, November 19, 1842.

"MY DEAR FATHER: I have just received your kind letter of November 1. You say that happiness does not consist in externals, nor in property. It is a fact of which I have long been convinced. The happiest and best people have not always the money,—for instance, Dr. Boott, and innumerable others. On the other hand, the money is, much of it, in the hands of undeserving and ignorant people. I say the same to myself of health, by way of consolation. It is a little world that we live in, and our position among its temporalities is of little importance. This strikes one when one hears of the death of such men as the Duc d'Orleans, or the Marquis d'Aguado, who rolled in wealth and comfort here, and who may not unlikely have found their level, by this time, below many of the *chiffoniers* who die of cold and privation. I comfort myself too by comparing little things with great. I have got a chronological chart upon which I find America occupying a square inch in a space of six or eight feet filled with the rising and crumbling of whole nations of whom we know little or nothing. How many cases perfectly parallel to ours have

existed in the five thousand years of the world's progress, and how many more will occur, of neither of which we know anything! And again, how small and unimportant are our troubles compared with those of a majority of our fellows! Women are making shirts at this moment in England for three half-pence, and find the thread. A woman went to borrow a penny to buy thread, saying that she and her husband would have to wait for bread until she got her three half-pence for the shirts she was making. This world is but a speck in the system, and this system among other systems, and I but a speck in the world. Of what real importance is the house I live in, or the manner I get my money (honestly), or the amount I get, since one hundred years hence nobody will know anything about me? The great end and principle of life is moral accountability; and I must say that I am very indifferent to the opinion of men who steal their money like Mr. ——, who sacrifice their souls to it like Mr. ——, or who, having amassed it, keep their sons making figures all their youth to the exclusion of every sort of expanded knowledge, like Mr. ——. Nevertheless, I am aware that in America money is the great pursuit; that the richest man is the most respected; and I do not mean to say that we should not so far conform to people around us as to give it a certain amount of attention. It is difficult to say how far we are removed from the original Christian state, which gives all goods to the poor; but I believe it is not less certain that we live in a most distorted and unnatural condition in America, where, after a certain conformity with the conventional rules of morality, a man's, and especially a young man's, merits are measured by his thriftiness, his chance of making money. What would a man like Dr. Boott go for in New York, or what does Mr. Gannett pass for in Boston, except among the few? They are excellent, sincerely good Christians and charitable men. Dr. Boott lacks nothing but thriftiness, and Mr. Gannett, besides this quality, the man-of-the-world talents, which are partly its cause and partly its results. In spite of the force of public opinion, in spite of the 'almighty dollar,' I do not see the reason for desponding because I do not keep pace with the erroneous notions and pursuits of people around. So much for the local ideas which magnify in our country the presence or absence of property. I do not mean to deny that a man, as a general rule, in a savage or civilized state, should support his family; but I do mean to say that the accumulation of a greater or less amount of property has not the real value which is erroneously attached to it in our country, and that happiness is far from being in proportion to it. A chance which could not be foreseen has willed that you should not accumulate money, which you, from your character, talents, and your industry, had a right to expect; but this event, in this short life, is a very inconsiderable one, compared with those of the real and long one which is to come. For your sake I regret with

all my heart that you could not have amassed money enough to spend freely, and indulge your tastes; but none of your children will regret a moment that you did not leave them a *sou*, should circumstances so will it. They will remember you as the best of fathers and the soundest of men, who had the warmest of hearts, a most cultivated mind, and an unwavering principle of right and truth; and there are few who leave such a character behind them. As to what the world will say, who are the world who take it upon themselves to judge between you and your family? They are men of property, who have been studying account books and rates of interest while you have been alleviating pain and suffering; who have ruined their friends and their brothers by extorting the payment of money, while you have diminished your bill to strangers because they found it inconvenient to pay you, and have visited poor people without any recompense at all. They are not the men to stand aloof and give their decisions.

"My dear father, I send this fragment of an unfinished letter, which I had laid by to finish, because it expresses a part, though a small part of what I should like to write to you if I were well enough to write a long letter. "Your affectionate son."

Louis' "Numerical Method" was at this period deemed "the master key which was to unlock the secrets of disease and its remedies," as Holmes wrote. That this method of his teacher did not appeal so strongly to Bigelow as to Holmes is shown in his address as president of the Boylston Medical Society in 1846. That address was called "Fragments of Medical Science and Art," and in it Bigelow made an appeal for the inductive method in medicine, rather than that we should trust to the mere accumulation of duplicate facts. He dwelt upon the importance of imagination in science. He showed the true office of hypothesis in the discovery of truth. This thesis brought him into notice, for it was clever and somewhat original. New facts were what Bigelow believed should be sought, not the mere accumulation of old ones. He thought the old ones could be ascertained best by new methods of research. The new opportunity was even then opened to him through the introduction of the microscope, and the new leader for him was James Paget, who was then delivering at the

Royal College those lectures on the pathology of surgery which made him famous. To hear Paget, Bigelow had been used to make weekly trips from Paris to London, then no small undertaking.

While in Paris, Bigelow and Jeffries Wyman lived in the same house, and thereby formed the friendship which association and the kindred tastes of future years made permanent. After a short stay in Rome, while convalescing from typhoid fever, and incidentally taking drawing lessons, Bigelow returned to Boston in 1844, and established himself on Summer Street, at the west corner of Chauncey Place, where Jeffries Wyman also had taken an office. The time was propitious. The town had a population of about one hundred and fifty thousand, with a list of regular medical practitioners of about one hundred and sixty; the lectures at the Lowell Institute, and those at the American Academy of Arts and Sciences were creating among the laity a curiosity about science. The public were saying and the younger physicians were thinking that all the wisdom and skill in medicine were not confined to the older men. It was the familiar story. The revolution needed but a leader, and Bigelow was a born leader. He was well trained, and he was a fighter. He asked no favors; he made no concealment of his purpose. He would even force the fight. Tradition, seniority, prestige, family influence in practice, must all prove their claim or take the consequences. Criticism and ridicule were of no avail. James Jackson said of Bigelow, "If he does not become a distinguished man, it will be because Boston is not a large enough field for his ability." But his success was phenomenal and almost immediate. He was a marked man upon all occasions, whether public or private; and certainly he was not above theatrical arts, with his dashing French cabriolet, his horses in gaily monogrammed harness, his fashionable personal appearance, and,

finally, his establishment of a "Charitable Surgical Institution," offering service to the poor by means of conspicuous signboards, and by circulars among the country practitioners. There was a row, and ridicule, jealousy, and criticism. Henry Bryant, who had been an externe in a Paris hospital, was Bigelow's partner in the "Institution." Here is their famous circular and the witticism it provoked:

"Boston, January 1, 1847."

"Sir: The subscribers have established a 'Charitable Surgical Institution for Outdoor Patients,' in the building of the 'First Church' in Chauncy Place, where they will attend daily, from 11 to 12 o'clock.

"They propose to give gratuitous advice, and to perform gratuitously any operation that may prove necessary, either at the rooms or at the boarding place of the patient in Boston. A medical attendant will reside upon the premises, who will direct patients to good and reasonable boarding-places, and afford any other desired information.

"A written diagnosis, prognosis, and course of treatment in any case will be forwarded to any physician who shall request it in writing.

"The subscribers are also ready to operate or to consult gratuitously at the residence of the patient in the country, when circumstances render it necessary.

"Physicians may at all times obtain vaccine matter gratuitously at the above rooms by applying postpaid.

"Cases of pulmonary or cardiac disease can also be physically examined at the rooms, as above, if desired.

"Henry Jacob Bigelow, M. D.
"One of the Surgeons of the Mass. Gen. Hospital.
"Henry Bryant, M. D.
"Late *Externe* at the Hôpital Beaujon, Paris."

The Witticism.

"Boston, March 1, 1847."

"Dear Sir: You are respectfully informed that the subscribers have opened a Medical and Surgical establishment for the purpose of furnishing gratuitous professional assistance to all applicants, together with medicines, surgical apparatus, board, lodging, good clothes, and whatever else the circumstances of the patient may require.

"Patients residing at a distance will, on application, have carriages sent gratuitously to take them to our rooms; and those requiring our services at home may depend on our making the utmost speed to their residences.

"Nurses, attendants, and all the conveniences of the sick chamber gratuitously supplied.

"We are also prepared, on receiving from a country physician a carefully written account of any case, to send gratuitously our opinions, with medicines and a coffin; and that our facilities for giving an accurate diagnosis may be appreciated, we are happy to add that we have recently obtained a stethoscope of six thousand ordinary stethoscopic power, by which means cerebral auscultation can be practised at a great distance, and many things heard which do not in reality exist.

"Physicians and patients may be assured that all applicants at our room will receive gratuitously every advantage which the highest professional attainment on our part, and the most unlimited resources, can provide.

"The advantages of early application are obvious; it will at once insure to patients the full ardor of our professional zeal, and demonstrate our superiority to all old practitioners and country physicians, and prove that we are illustrious men. To those to whom this may be a matter of doubt, we would add, that one of us, after about only one year's arduous practice, is already made one of the Surgeons of the principal Hospital in New England, having a father, two or three uncles, and several influential friends connected with that institution, who have a just appreciation of us, and through whose interest we hope to fill the Professorship of Anatomy in the Medical School; both of us have also studied either outside or inside of a hospital in Paris.

"Festinans Bigblow, equal to two Surgeons.
"Mr. Externus, recently from abroad."

Bigelow was one of the leaders, if not the actual American pioneer, in the study of surgical pathology, and he was one of the earliest microscopists in the country. In 1844 he published a "Manual of Orthopedic Surgery," which won the Boylston Prize for that year. This treatise was "a model of excellence, and one of the best publications to illustrate the French School of Orthopedic Surgery—the dominant school of that time."* The chapter on Strabismus, in this essay, was the first complete presentation of that subject published in America.

Bigelow was appointed an Instructor in Surgery at the

* E. H. Bradford, Presidential address, American Orthopedic Association, September 17, 1889.

Tremont Street School in 1845, succeeding Reynolds. This position he held until the school was merged in the Harvard School. On the 28th of January, 1846, he was appointed a visiting surgeon to the Massachusetts General Hospital, then recently enlarged. Bigelow was now twenty-eight years old. On October 16th, 1846, came the introduction of surgical anaesthesia. The story of Bigelow's connection with this discovery would be a volume in itself. From the first he saw its magnitude. He threw all his enthusiasm into the advocacy of the use of ether. Holmes gives the following account of Bigelow in connection with that memorable event:

"On the evening of November 2, 1846, he called at my house in Charles Street with a paper which he proposed reading at the meeting of the American Academy of Arts and Sciences to be held the next day, and which he wished me to hear. He began by telling me of the successful use of the inhalation of a gas or vapor which produced insensibility, during which a capital operation had been performed at the Massachusetts General Hospital. He was in a state of excitement as he spoke of the great discovery, that the gravest operations could be performed without the patients knowing about it until it was all over. In a fortnight the news of this wonderful discovery, he said, will be all over Europe. He then proceeded to read to me the paper he had prepared,—the first formal presentation of the subject to the scientific world. He had the sagacity to see the far-reaching prospects of the new discovery, the courage as well as the shrewdness to support the claims of the adventurous dentist's startling, at first almost incredible, announcement. Every possible effort was made to dislodge the infant anaesthesia from the cradle in the Massachusetts General Hospital, but there remains the fact that all over the wide world patients were shrieking under the surgeon's knife and saw,—operator and victim alike ignorant of the relief in store for them at the very time when Dr. Bigelow was unfolding in my library the first paper ever written on the subject. From the first Dr. Bigelow was the steady, unflinching advocate of ether as the safest of the anaesthetics."

Bigelow's writings in behalf of anaesthesia and in advocacy of Morton's claim to the right of being held its discoverer, cover a period of thirty years, 1846-1876, and are historical. They deal with every condition connected with the introduction of surgical anaesthesia.

The entrance of Bigelow into the "Faculty" of the Massachusetts General Hospital was looked upon by that body as little less than an unwelcome intrusion. His youth, his undisguised determination to change old customs, his independence and aggressiveness, were all out of harmony with long established formalities. We may accept the statement of Henry G. Clark before the Massachusetts Medical Society on June 3, 1868: "The world does not know, nor will it until the true history of the use of ether in this case (Alice Mahon's, November 7, 1846) comes to be written, how near to a lost opportunity this was; nor how much it was indebted for its triumphant success to the sagacity, the adroitness, and the energetic remonstrances against the obstructive etiquette and red tape which imperilled everything, of the then junior, and now senior, surgeon of the hospital, Dr. Henry J. Bigelow."

Here is an interesting bit from a message sent to W. Sturgis Bigelow by William J. Morton, the discoverer's son: "Verbally, my mother thinks your father advised my father to induce Warren to permit public experiment, hence Abbott."

Bigelow's test of the ether claims has come to be accepted: It is *safety, certainty,* and *completeness.* He sent out the first account which the old world had of the new discovery, and he experimented with other anaesthetic agents in his endeavor to find a local anaesthetic. From these experiments resulted the knowledge that insensibility from the inhalations of nitrous oxide gas is due to asphyxia, and that we must use large quantities of the gas. He also discovered the anaesthetic properties of keroselene and rhigolene. Bigelow personally administered the ether at the Massachusetts General Hospital during the year succeeding its first use. So identified became his name with the subject that he was the only one suggested as the appropriate person to give the dedicatory address upon the completion of the monument in the Boston Public Garden, June, 1868, erected to commemorate "the discovery that

the inhaling of ether causes insensibility to pain." Holmes said before the American Academy of Arts and Sciences (Vol. xxvi): "Had Dr. Bigelow left no other record, the association of his name with the great inventive discovery of artificial anaesthesia would preserve his memory to the latest period of civilization."

Let us follow Bigelow through his hospital career before describing the other achievements of his busy life. He was a brilliant operator, fearless, full of expedient, ingenious, dexterous and graceful, cool, alert and practiced. "To see him operate was to recognize a master," says D. W. Cheever. His familiarity with tools gave him a dramatic style of operating which dazzled novices. He taught them to make large, free incisions,—one of his favorite maxims was, "When you have a cut to make, make it." Although one of the most adept in the handling of instruments, he gives this advice also to students in "Fragments of Medical Science and Art," "Do not identify surgery with the knife,—with blood and dashing elegance. Distrust surgical intrepidity and boldness. If any such epethets have any meaning, they are in bad taste, and tend to give wrong impressions of scientific excellence. * * * Surgery is not operative surgery. Its province is to save, not to destroy; and an operation is an avowal of its own inadequacy."

In the hospital he disliked the drudgery and routine of post-operative work. He placed the greatest confidence in his house-pupils, and entrusted the after care of his patients to them with confidence. Yet the slightest carelessness, or the faintest sign of relaxing diligence, or the attempt to assume responsibility, would bring upon the head of the unwise pupil such a lesson that its repetition was never required. After the favorite student passed into the ranks of practitioners, Bigelow would follow him with unfailing interest, offering unobtrusive advice, and sending him cases. Many men were

so assisted by the teacher who they thought could scarcely have remembered them as house-pupils. "No allusion would ever be made as to the source of this success, no gratitude claimed, and no thanks allowed;" such is the testimony of one who publicly acknowledged his indebtedness to this generous surgeon. In his services at the hospital Bigelow was constantly displaying his inventive genius. H. H. A. Beach says; "There is hardly an instrument in the operating cases of the Massachusetts General Hospital which does not show some advantage gained from his working with it." Among the more noticeable instruments modified or originated by Bigelow are tourniquets for thigh, arm, and wrist; needle-holders; a sinus dilator; handles for drills; mouth-gags; an urethral-divulsor; retractors for amputations; polypus forceps; compressors for aneurism; torsion instruments; artery forceps with a device for discharging ligatures; autopsy tables; an operating chair; apparatus for angular extension. Notwithstanding the variety of this list Bigelow had such an aversion to the placing of a surgeon's name on instruments that few of his inventions were known outside the circle of his hospital colleagues. In 1869, while in Europe, he purchased at a cost of several thousand dollars a complete surgical outfit. These instruments he had arranged in four large mahogany cases which he presented to the hospital, together with a sum of money for their perpetual replenishment and repair. He was an inventive genius, and invention he believed consisted of three distinct stages: 1st. Think out clearly the object it is wished to accomplish. 2d. Determine the combination most likely to accomplish this. 3rd. Reduce the mechanical combination to its simplest terms.

Among the best inventions of Bigelow is an autopsy-table so arranged as to provide for the disposal of gases and liquids during post-mortem examinations, and an operating chair of

which it has been said it "could do anything but speak." This was the chair which so interested Dom Pedro, Emperor of Brazil, on his visit to the Massachusetts General Hospital in 1876, that he acquainted Augusta, Empress of Germany, with its wonders, and she, in turn, asked for a set of working drawings from which a similar chair might be reproduced for the military hospitals of Germany. Bigelow received in return a volume of the prize work of Friedrich Esmarck, "Handbuch der Kriegschirurgischer Technik," bearing the holograph inscription of Her Majesty.

In his hospital visits he was all attention. No idle gossip, no unnecessary delay. Pain and unsatisfactory progress of his patient received his immediate personal attention. He opposed "meddling," and was in the habit of allowing the dressings on amputations to remain unchanged "so long as a solution of chlorinated soda, frequently applied to the outside, would keep them odorless." The introduction of Listerism at the Massachusetts General Hospital took place in the year of Lister's first publication (1865) of his method. The story goes that two amputations were done by Bigelow, and treated with Lister dressings. His paper on Antiseptics* was one of the earliest of such published in this country, but the great advance came in his old age. He never practiced asepsis adequately or appreciated it or gave it his confidence.

Bigelow opposed the establishment of separate wards for the care of cases of skin diseases, at the Hospital, believing that such a course would be detrimental to existing departments and would open up an avenue for separate wards for other specialties. Another policy opposed by him was the acceptance of fees from their hospital patients by the surgeons. The discussion of such questions, as well as a difference of opinion over certain hospital appointments in 1885, is

* "Boston Medical and Surgical Journal," June 5, 1879.

said to have led him to resign. The following letter tells his story:

"TO THE TRUSTEES OF THE MASSACHUSETTS GENERAL HOSPITAL:—

"GENTLEMEN: Having, at the expiration of forty years' service, in pursuance of an intention I have for some time entertained, resigned my position as Surgeon, you have done me the honor to appoint me to the office of Emeritus Surgeon of the Massachusetts General Hospital, without a vote in the Medical Board.

"I am aware that this is the first time in the history of the Hospital this honor has been conferred, and I am very grateful to you for the compliment. But although during the whole of my professional life the Hospital has been one of my few permanent interests, and will continue to be so, and although, as long as I felt convinced that I was of service to the Hospital, I was reluctant to sever my connection with it, there are reasons which compel me with regret to decline the honor.

"Whoever accepts the place of Emeritus Surgeon, with the privilege of using the beds of the Hospital, yet without a vote in the Board of Physicians and Surgeons, especially if this limitation is made at the expressed wish of members of that Board, would naturally be expected to confine his attention to the sick under his care. He would cease taking the greater and active interest in the general welfare of the Hospital which before had been his duty. He might even have to remain a mere spectator, while still feeling a certain responsibility for what he did not approve. On these grounds I have decided to carry out my design, and give up all connection with the institution.

"Will you permit me, in leaving, to call your attention to a few considerations connected with the internal administration of the Hospital, all the bearings of which may not be evident to those who are not familiar with them practically. Were the late Dr. Whittemore still alive, I should think this unnecessary.

"The Hospital at present is in a state of great efficiency, due to its excellent management for a series of years, and to the thorough and wise discipline maintained by its late admirable Superintendent, supported in no doubtful manner by the Trustees. Its traditions and its charities are at this moment as clean as are its walls and floors. Never have its usefulness and its reputation been greater than now. For forty years there has been no friction in its working. Trustees and staff have always cooperated to the same disinterested ends. And this would naturally last so long as all questions of personal and private interest were banished, as heretofore, from any connection with the Hospital.

"The recent differences have been due to a gradually increasing diver-

gence of views in the Board of Physicians and Surgeons. Some of its members desire to see introduced into the Hospital certain new features, which, although they might prove advantageous to some members of the Board, others object to, on the ground that any such measures are injurious to a charitable institution. It is a familiar fact, for example, that some members of the staff have a desire to use the institution as a home for their private patients, and in that way make it contribute to their professional emolument. In my opinion, any such change, however plausibly introduced, will inaugurate for the Hospital an era of decline. Another measure relates to the continued attendence of the surgeons out of their regular term of service. If this practice is once established, besides leading to confusion in the duties of the house officers and attendants, and otherwise impairing the discipline of the Hospital, it will in time, through the repeated admittance of private patients of members of the staff, inevitably bring with it the question of the payment of fees directly or indirectly for medical or surgical attendance. Other measures may be mentioned; one, making Sunday a regular operating day, to the great inconvenience of the attendants of the house; and recently another, reducing the number of surgeons to four, instead of six, the number heretofore. I have thought it best for the Hospital to oppose all these measures.

"Knowing that of late years continued vigilence has been needed in the Board of Physicians and Surgeons to prevent the initiation of any such changes, I believe that the same viligence will now be needed on the part of the Trustees. The institution has incurred no obligation to those upon whom it has bestowed the professional distinction and the great professional advantages of its medical offices. Its Trustees should weigh carefully any measure which would tend to confuse the administration of a great public charity with the promotion of private interests, or subordinate its general discipline to private convenience. I am confident that a clear expression of the views of the Trustees upon these subjects would be of great advantage, for there should be no misapprehension about them.

"Again thanking you, gentlemen, for the honor you have done me, and with my best wishes for the continued prosperity of the Massachusetts General Hospital, "I am respectfully yours,

"February 18, 1886." "Henry J. Bigelow."

In order to consider Henry J. Bigelow's life as a teacher, author, and public benefactor, it is now necessary to go back to 1845. In that year he succeeded Edward Reynolds as Professor of Surgery in the Tremont Street Medical School. Already he had been Instructor in Surgery and Chemistry at

that School for about one year. In his early connection with the Tremont School he gave an illustrated course of lectures on hernia. For this course he procured rooms near the Harvard School in North Grove Street. The lectures were illustrated by drawings, dissections and cases, and, as they were set for the hour at which the lectures in chemistry were given in the adjoining Harvard School, they proved too great a counter-attraction for the students. This disconcerting popularity caused displeasure on the part of the Harvard Faculty, and the lectures were transferred to the Chauncy Place Infirmary. The transference assured his election as successor to George Hayward as Professor of Surgery at Harvard, and he was chosen on April 28, 1849. This appointment proved to be a great thing for Harvard. Bigelow's surgical ability was generally acknowledged, and he had shown an interest in teaching. He was the peer of any physician in Boston at that time as a microscopist, and had a good knowledge of surgical pathology. Besides, he had recently received an appointment as Surgeon to the Massachusetts General Hospital which was, and is yet, a great advantage to surgical teachers.

He was utilitarian in his teachings, as he was in everything else. His style was terse, clear, epigrammatic, seldom oratorical. He put the subject vividly before his hearers, and avoided confusing details. He believed that no branch of education was more essential to the medical student than pathological anatomy; to him it was the corner-stone of medicine. He was profuse in demonstrations both with living and dead subjects, often making rapid dissections during the lecture, which with his accomplishments as a draughtsman impressed the idea presented in a way seldom forgotten. In discussing any subject he followed no set rules, but gave the student what was useful and material. He was as earnest in dealing with simple ailments as he was in giving the details of major operations. He believed the greatest good was accomplished in

medical education by a constant restatement of undisputed facts, and by a constant reference of those facts to some broad principle. In this way, said he, sound judgment is developed, and nothing is more essential in surgery than this quality of mind. Without it skill becomes a dangerous weapon.

Another principle of Bigelow's was the value of sight alone in the diagnosis of fractures. He taught that most fractures and dislocations have characteristic deformities, and that nothing is gained by their manipulation. Pain is thus avoided, and to Bigelow few things were more essential than this. It was to accomplish this that he threw himself into the exploiting of surgical anesthesia. As to fractures, if more information was wanted than could be got by inspection, then he advised etherization. For all surgical treatment his rules were so simple that they could not be confused or forgotten. Many practitioners can testify to difficulties in surgical practice from which they have escaped by recalling some homely phrase or example used by Bigelow in his lectures. Who ever heard his words on the diagnosis and treatment of injuries of the elbow, but has carried it always in mind thereafter? Who has not found in his impromptu lectures in the ward, the accident-room and the old amphitheatre, the principles of future action in practice when called upon suddenly to treat the emergencies of daily experience? Underneath the apparently elementary nature of his instructions, and the decidedly practical nature of his teachings, there was a scientific love of deeper things. With an instinct which followed every clue, his position as teacher, as microscopist, as surgeon, gave him abundant opportunities to pursue his research. He undertook no operation without a previous regional exploration in the dissecting room, hoping some better way might be found to increase safety and effectiveness. Nothing escaped his observation, and he was constantly striving to shed new light upon old problems. Witness his exposition of stellate fracture

in the lower end of the radius, the mechanism of impaction in fractures of the neck of the femur, the treatment of ununited fractures, and of stricture of the urethra. Out of this practice, this scientific spirit, this patient method, resulted his two master-pieces, litholapaxy, and the explanation of hip dislocations. Then there was his work of pathological research in surgical affections. With an artist trained and employed by himself, he labored for years. Colored drawings were made of gross and microscopic appearances, as well as those representing micro-chemical examinations of the various specimens collected and examined. The drawings were converted into permanent forms, and preparations were made to illustrate his life's work. Then, to his dismay, the completed work of Lebert, "Atlas of Pathological Anatomy," appeared. His object had been accomplished by another, and his own drawings reverted to the uses of the class room. R. H. Fitz says that "The beauty of some of these pictures is so conspicuous, in virtue of color and outline, that one forgets the repulsive nature of the object, and simply admires the skill of the artist." These plates, when given to the Medical School, bore the name of the artist by special stipulation of the donor.

In his "Notes from Clinical Lectures on Surgery" (1851), Bigelow shows a love for knowledge which is more than utilitarian in its object. It was his practice to show a median section of the head and neck every year to the students for their instruction, as well as himself to study cleft palate, the treatment of which was especially interesting him. In these dissections he noticed the excessive turgescence of the mucous membrane of the inferior turbinate, and its sudden collapse while under inspection. From this observation resulted one of the few additions to human descriptive anatomy made in this country. He termed it "Turbinated Corpora Caver-

nosa."* The spongy nature of this tissue as first pointed out by Bigelow gives the hint for the treatment now employed in the use of the cautery for catarrhal and allied affections. The anatomist, Holmes, said: "This discovery shows that Dr. Bigelow looked with his own eyes. Thousands of keen-eyed anatomists had been over the human body to find something that no one else had ever noticed. All that region had been examined by tens of thousands who had never pointed out that particular structure. It takes the born discoverer to do such work,—the man who cannot be satisfied till he gets to the bottom of things."

This same spirit led Bigelow to observe that the same hip dislocations could be demonstrated year after year on the same subject, notwithstanding the lacerations which the capsule of the joint underwent. This refusal to wear out was at first thought due to the protecting of the muscles. In 1861, however, he noticed that the same conditions existed even when the muscles were ruptured, the ligamentum teres broken, and the entire capsule torn away,—*with the exception* of the anterior part. That anterior part always remained as a strong fibrous band, fan-shaped and slightly forked. Here was the key to the problem of hip-dislocations and their treatment. He read his observations before the Boston Society for Medical Improvement in 1861. In 1864, before the Massachusetts Medical Society, he read a supplementary paper, and in 1865, he presented his third essay at the meeting of the American Medical Association. In 1869 he published a volume, "Mechanism of Dislocations and Fractures of the Hip, with the Reduction of the Dislocation by the Flexion Method." Thus for eight years (1861-1869) he had worked patiently, giving the whole medical world an opportunity to confirm, contradict or anticipate him. The medical world took advan-

* "Boston Medical and Surgical Journal," 1875.

tage of its opportunities, but Bigelow's work withstood the test. He had dispelled the darkness which had baffled the researches of Sir Astley Cooper and others of former times.

Besides his concern with the introduction of surgical anaesthesia and hip-joint dislocations, Bigelow was to add another triumph to his career, and again make humanity his debtor. In 1878 he published his essay, "Lithotrity by a Single Operation." In England the school of lithotomy favored by Paget was rapidly gaining the ascendency over that of Thompson. Bigelow went to the root of the treatment. First he questioned the traditional authority for much of the practice concerning lithotrity as then employed. He found erroneous the belief that the baneful sequelae of the operation were due to injury inflicted by the lithotrite, and not to the fragments of stone left in the bladder. This made easy the second point in his problem: prolong the operation, and get out all the fragments; make it complete at one sitting. Civiale had restricted each sitting to five minutes, and Sir Henry Thompson to two minutes. Further experiments convinced Bigelow that the urethra could be dilated sufficiently to employ "an evacuator which should evacuate." For three years he labored in experimenting, devising, improving and finally perfecting, an instrument which would do two things—lessen the danger of the operation, and shorten the duration of the treatment. The results were made public in 1878. As with his discovery of the Y ligament, Bigelow's statements were received with reluctance; for a time the discussion was heated, but all men came to recognize the truth; and slowly, even Sir Henry Thompson admitted that "Crushing stones at one sitting, and removing all the fragments by the aspirator, has proved the most successful operation ever practiced in dealing with very large and hard formations." The "Rapid Lithotrity with Evacuation," was published in the "American Journal of the Medical Sciences" for January, 1878. In 1883 the National

Academy of Medicine of Paris awarded Bigelow the Argenteuil Prize of six thousand francs, the remaining four thousand going to M. Théophile Anger, for another operation on Peno-scrotal Hypospadias. In 1881 Bigelow was invited to attend the International Triennial Congress of Physicians and Surgeons in London. There he received an ovation, and was made a member of the Clinical Society of London. At home he was made *Emeritus* Professor of Surgery at Harvard, and received from her hands the LL. D. in 1882.

In the Medical Faculty, Bigelow was an important factor. He was vigorously against the improvements proposed in 1870-71 at the Medical School, and was described as a "strenuous and indefatigable opponent." From the date of that meeting, at which he asked why so many changes were planned when everything was prosperous and quiet, and received President Eliot's reply: "I can tell Dr. Bigelow the reason; we have a new president,"—from that time it was a battle royal between the forces led by the two men. Bigelow pleaded conservatism, caution, moderation; Eliot advocated placing the School upon a financial and educational basis commensurate with its position as a department of Harvard University; that it should no longer be a school conducted for the benefit of its teachers, acting with all the prestige, but with none of the constraining influence, of the Corporation. Necessarily, the changes suggested were radical, and were bound to meet opposition. In Bigelow, the opponents to the changes had an active leader, a keen debater and a plausible reasoner; he neither compromised nor relented. Every move advocated by the liberals must be won or lost, nothing was conceded; step by step he fought, and he lost, as he fought. Finally, when a majority of the Faculty voted contrary to his opinions he brought himself to say: "The new measures have been adopted by the Professors in the spirit of personal sacrifice, with a full sense of the possibilities they may entail of in-

creased labor and diminished pecuniary receipts, and of which I feel it incumbent on me here to say, that whatever credit attaches to them is due to my colleagues and to the President of the University."

In 1871 Bigelow delivered the annual discourse before the Massachusetts Medical Society. He rehearsed the opinions which he had urged against the changes at the Medical School. This address, entitled "Medical Education in America," will repay your reading to-day; he was a far-seeing man. Any brief analysis of this address would fail to do justice to Bigelow and the questions at issue. He did not oppose raising the standard of medical education, but he opposed rather the proposed sacrifice of the practical, comprehensive and applicable branches of science. He insisted upon "a plain, sound, solid education, without error, if without ornament * * * the standard of medical education should be raised gradually, and with certainty, by making the best of opportunities available to the largest number." Notwithstanding his defeat, Bigelow served ten years longer with unabated devotion and zeal.

In the discussion of coëducation at the Medical School in 1882, Bigelow was a determined and vehement opponent to the admission of women. The scheme was defeated only by a vote of the Overseers, and their action was due almost wholly to him.

On May 29, 1882, Bigelow resigned his Professorship. Note President Eliot's comment on him in his annual report: "a clear and forcible lecturer, a keen debater, and a natural leader of men, by force of activity, ingenuity and originality." The Medical Faculty showed their appreciation of him by resolving, "That we recognize the great loss which this Faculty has sustained in the retirement from the chair of Surgery of Professor Henry J. Bigelow, whose keen observation, accurate research, and rare genius in devising new and improved

methods of operative procedure have done so much to render this School conspicuous, and to make American surgery illustrious throughout the world." And Bigelow said of the School he was leaving: "As to the Harvard Medical School itself it is a good one. It does not make more exceptionally prominent practitioners and scientists than is the case in other large cities, because prominence comes mainly from inherent qualities; but the average student is better educated here. He must study harder, and pass harder examinations. Studies are so arranged in order and amount that he can have not only all the education he needs, but he must acquire a good deal of it."

"Boston, January 22, 1882."

"The Committee to whom was referred the communication of the President and Fellows informing the Overseers that they had voted to appoint Henry Jacob Bigelow, M. D., Emeritus Professor of Surgery, in consideration of his many valuable services to the Medical School during the past thirty-three years, beg leave to report as follows:

"Dr. Bigelow's practical wisdom and energy greatly contributed to, and controlled, the progressive steps by which the Medical Department of the University has reached its present high position. His skill in pointing out the most important facts, and impressing broad generalizations from simple data, peculiarly adapted his instruction to the demand of American Medical Students, and inspired two generations of them with enthusiasm for their profession. He was one of the first American teachers to insist upon the importance of Surgical Pathology as a study. His far-seeing discernment identified him with, and quickened, the introduction of etherization. By his discoveries he has contributed to the enlargement of medical knowledge; and by his rare faculty of invention he has made brilliant improvements of immediate practical usefulness. Pre-eminent as a surgeon, possessed of varied scientific acquirements, the President and Fellows have justly recognized his services by their vote, and your Committee cordially recommend concurrence therewith on the part of the Overseers. "Signed,

"R. M. Hodges.
"F. E. Parker.
"R. M. Morse, Jr."

Letter accompanying the Transmission of the Diploma of the Degree of LL. D., conferred upon Bigelow by Harvard University.

"Harvard University, November 30, 1882."

"Dear Sir,—I have the honor to send you by this mail the diploma of the degree of Doctor of Laws which was conferred upon you at the last Commencement.

"In taking this action the University desired to testify in its traditional way that it appreciated your genius, recognized your professional achievements, and was grateful for your services as a teacher.

"Believe me, dear sir, very truly yours,

"Prof. Henry J. Bigelow, LL. D." "Charles W. Eliot."

From the Annual Report of the President of Harvard University, 1881-82.

"The resignation of Professor Henry J. Bigelow, after a service of thirty-three years, was an event of great interest for the Medical School and the whole University.

"A discoverer and inventor of world-wide reputation, a brilliant surgical operator, a clear and forcible lecturer, a keen debater, and a natural leader of men by force of activity, ingenuity, and originality, Dr. Bigelow was from the beginning to the end of his connection with the Medical School a very influential member of the Faculty. His energy and sagacity contributed to the rapid growth of the School between 1858 and 1870. During the discussions of 1870-71, in the Medical Faculty and the Governing boards,—discussions which resulted in important changes of the general plan and policy of the School,—his part was that of a strenuous, uncompromising, and indefatigable opponent of the new projects; but the caution and moderation which his opposition induced the majority of the Medical Faculty to practise doubtless made the measures they finally recommended all the wiser, and therefore the surer to succeed. Dr. Bigelow continued to labor in the School with unabated interest and vigor for ten years after the adoption of the plans which he had opposed. In recognition of his eminent services to the University and the public, Dr. Bigelow was chosen, in May last, Emeritus Professor of Surgery, and the degree of Doctor of Laws was conferred upon him at the last commencement."

To follow the other and various lines of activity which owe their inception, growth and embellishment to Bigelow, would carry us beyond the confines of a medical biography. In all things he followed the precept, "The secret of profitable observation is not only to observe accurately, but to know what to observe." Some simple toy, some new mechanical invention, ants, pigeons, birds, monkeys, snakes, jugglery, shoot-

ing, psychology, evolution, Buddhism, Mesmerism, finance, all received his thoughtful attention. Art, music and painting, appealed to his critical sense, and brought to him great pleasure. Obviously, he was made one of the first Trustees of the Boston Museum of Fine Arts, and one notes with interest that his last public communication bore the title, "An Old Portrait of a Surgeon." There is a portrait which long hung in the rooms of the Boston Society for Medical Improvement; it used to be thought a portrait of Ambroise Paré. Bigelow had a two-years' correspondence with experts in Europe, and learned incidentally many interesting things about Paré and other ancients. Finally he established the portrait in question as an original of François Herard, a French surgeon who died in 1682.

The last years of Bigelow's life were spent at Newton, Massachusetts, where he had a country house. There he met with an accident which seriously damaged his health. He died shortly afterwards, on October 30, 1890. Here are some gracious and eloquent tributes to the man:

Action of the Medical Faculty of Harvard University.

"The Medical Faculty of Harvard University desires to enter in the records its appreciation of the eminent services rendered by the late Henry Jacob Bigelow to the Medical School, with which he was connected as Professor of Surgery and Professor of Surgery Emeritus for more than forty years.

"Remarkably gifted by nature, his talents were made unusually productive and useful by his intense devotion to the work of the moment, only ceasing with the successful accomplishment of the task.

"His lectures were models of condensed thought and applied knowledge, and were delivered with an aptness of diction and a richness of illustration which made them ever memorable.

"As a member of the Faculty he was distinguished for the ripeness of his judgment, the wisdom of his conclusions, and the clearness and force of his arguments. Whether as advocate or opponent he was sure to add new light to the subjects under discussion, and was always to be recognized as a leader of men.

"His late and last communication to this Faculty showed a benevolent and beneficent interest in the continued welfare of the School."

Action of the Trustees of the Massachusetts General Hospital.

"The brilliant contributions of the late Dr. Henry J. Bigelow to surgical science entitle him to rank with the great surgeons of the world, and it is especially appropriate that the Massachusetts General Hospital should perpetuate the remembrance of his service of forty years upon its surgical staff, a service which contributed so much to the relief of human suffering, and gave the Hospital a wide-spread renown. It was here, in 1846, that, with enthusiasm and courage, he took a leading part in the demonstration of the anaesthetic property of sulphuric ether, a discovery which made possible his method of reducing the dislocation of the hip joint, and again his ingenious treatment by litholapaxy. It is no exaggeration to say that these improvements in surgery have made his name illustrious among the benefactors of mankind.

"It is therefore *Voted,* (1) That the operating-room of the Hospital be hereafter designated as 'The Henry J. Bigelow Operating Theatre,' and the resident physician is instructed to have this name inscribed upon its walls. (2) That the Secretary be instructed to communicate the foregoing vote to Dr. William S. Bigelow, with the request that he will allow the trustees to have made a copy of one of the portraits of his father, to be placed in the Henry J. Bigelow Operating Theatre, in order that the pupils of the Medical School in coming years may be stimulated by his achievements to a more thorough devotion to the noble profession which they have chosen to make their own."

Resolutions of the Medical Board of the Massachusetts General Hospital.

At a meeting of the Medical Board of the Massachusetts General Hospital, December 5, 1890, Drs. Homans, Beach, and Cabot, a Committee appointed by the Surgical Staff, submitted the following remarks and resolutions:—

"Dr. Henry Jacob Bigelow was for forty years one of the visiting surgeons of this Hospital. He was a man of wonderful mechanical skill and touch. Inheriting a remarkable intellectual power and coolness from his father, well taught by opportunities for observation and cultivation, of which he made the most, he entered on the practice of surgery perfectly equipped. Hampered in no way, neither by want of means nor by serious ill health, and endowed with an almost intuitive perception of what was the proper course in every case, he never hesitated. No other result but success in his profession was possible. It was assured by his natural abilities, his unfailing instinct, and his cultivated judgment.

"In the mechanical execution of a preconceived and thoroughly thought

out plan of operation, he was superior to other operators, and was as certain as he was graceful, brilliant, and daring.

"Dr. Bigelow's life was coincident with the discovery of anaesthesia by ether, of which he was one of the leading advocates. He himself contributed one of the greatest discoveries of all, that of a knowledge of the mechanism of the hip joint, a knowledge which enables us to reduce a dislocation rapidly, painlessly, mercifully, and intelligently. This discovery alone was enough to immortalize him, but in his later years he added another practical benefit to surgery and humanity, namely, his method of relieving those suffering with stone in the bladder. And it will be noticed that all his inventions, achievements, and improvements were practical, and, one might say, manual.

"How thorough he was in perfecting a mode of procedure before he introduced it! He never published until he was absolutely certain, and could demonstrate his method in an almost offhand way. And then how concise in his writings! Not an extra word; every sentence concentrated down to its alkaloid, as one might say. And it must always be remembered that it was in this Hospital that the intelligent reduction of the dislocation of the hip by Dr. Bigelow's method was first demonstrated, and that it was in this Hospital that the crushing and removal of a stone from the bladder at one sitting was first practiced,—an operation to which Dr. Bigelow gave the name of 'litholapaxy.'

"The code of ethics submitted by him to the Massachusetts Medical Society, and which was adopted, is simply to be a gentleman, to treat others as we would be treated; that is the sum and substance of it.

"His familiarity with the science of mechanics, with the use of tools, and with the engraver's art supplemented his practical skill as a surgeon, and rounded out and perfected the clear, concise and brilliant articles he published. His native city and country are proud of him, and suffering humanity will forever be relieved by the inventions of our late associate visiting surgeon as long as the world shall exist. Therefore,—

"*Resolved,* That by the death of Dr. Bigelow the Hospital has lost a friend whose interest in its success as a great charity was ever active and devoted;

"That, through his extraordinary skill in operating and teaching, and the rare judicial character of his investigations in weighing the evidence of disease, standards of work have been established at the Hospital that have contributed much to the advancement of the art of surgery and the comfort of the afflicted;

"That his accomplishments in the art of treating hip joint dislocations and stone, now adopted throughout the civilized world, have distinguished his name among the leading surgeons of his time;

"That the entire surgical staff, who have without exception been his

pupils, tender this acknowledgment in grateful remembrance of one whose first instinct was to save."

"The Councillors of the Massachusetts Medical Society receive with the deepest sorrow the official announcement of the death of Dr. Henry Jacob Bigelow, and avail themselves of the earliest opportunity to place upon their records an expression of their great respect for his character, and their high appreciation of the services rendered by him to the Society which is here represented, and to the medical profession.

"That Dr. Bigelow was one of the most accomplished surgeons and eminent teachers of his time is the unanimous verdict of his contemporaries, and that his relative place in history will be the same seems equally assured. The great practical achievements with which his name has become imperishably associated have in them permanent and enduring qualities, and will bear his fame to future generations. So long as, and wherever in all the wide world, a human sufferer in the hour of sorest need experiences the merciful alleviations of anæsthesia, or the surgeon approaches the management of vesical calculus or luxation of the hip joint with confidence and courage born of the new and better methods, so long and so universally will the name of this distinguished surgeon and great benefactor of the race be remembered with gratitude and spoken with admiration.

"Dr. Bigelow's long and useful connection with this body is recalled with most agreeable associations. His participations in its proceedings have always influenced results, and contributed to the general welfare. No Fellow of the parent Society has been more faithful as a Councillor than he.

"Of gracious, dignified, and noble presence, wise, witty, sententious, and direct of speech, eloquent, courageous in debate, yet courteous to opponents, the memory of his service here will be an enduring pleasure."

Writings.

"Manual of Orthopædic Surgery." Boylston Prize Dissertation. Boston, 1845.

"Fragments of Medical Science and Art." An Address delivered before the Boylston Medical Society. Boston, 1846.

"Insensibility during Surgical Operations, produced by Inhalation." Boston Medical and Surgical Jour., 1846.

"Bowditch's Young Stethoscopist." Boston Medical and Surgical Jr., 1846.

"On a New Physical Sign,—A Clicking in the Throat." Boston Med. and Surg., 1847.

"Anæsthetic Agents, their Mode of Exhibition and Physiological Effects." Transactions of the American Medical Association, 1848.

"Ether and Chloroform: a Compendium of their History, Surgical Use, Dangers, and Discovery." Boston Medical and Surgical Jour., 1848.

"On the Employment of a New Agent in the Treatment of Stricture of the Urethra." Boston Medical and Surgical Jour., 1849.

"A Lecture Introductory to the Course in Surgery." Boston, 1849.

"Dr. Harlow's Case of Recovery from the Passage of an Iron Bar through the Head." The American Journal of the Medical Sciences, 1850.

"Notes from Clinical Lectures on Surgery." Boston Med. and Surg. Jour., 1850-51.

"Stellate Crack of the Radius at the Wrist." Boston Med. and Surg. Jr., 1858.

"Science and Success." A Valedictory Address delivered to the Medical Graduates of Harvard University. Boston, 1859.

"Leucocythæmia." Boston Medical and Surgical Jour., 1860.

"A New Anæsthetic: Kerosolene." Boston Medical and Surgical Jr., 1861.

"Surgical Cases and Comments." Boston Medical and Surgical Jour., 1864.

"Rhigolene, a Petroleum Naphtha for producing Anæsthesia by Freezing." Boston Medical and Surgical Journal, 1866.

"Periosteal Reproduction of the Condyles of the Humerus after Excision of the Elbow Joint. Periosteum of the Forehead transplanted in a Rhinoplastic Operation." Boston Medical and Surgical Jour., 1867.

"Ununited Fracture successfully treated; with Remarks on the Operation." Boston Medical and Surgical Jour., 1867.

"Nitrous Oxide Gas for Surgical Purposes in 1848." Boston Med. and Surg., 1868.

"Address at the Dedication of the Ether Monument in the Public Garden of the City of Boston." City of Boston Document No. 101, 1868.

"Practical Views of the Treatment of Fractures and Dislocations of the Elbow Joint, and on the general Impropriety of Passive Motion." Boston Medical and Surgical Journal, 1868.

"The Mechanism of Dislocation and Fracture of the Hip. With the Reduction of the Dislocations by the Flexion Method." Philadelphia, 1869.

"Cleft Palate." Boston Medical and Surgical Journal, 1869.

"Luxations of the Hip Joint." Boston Medical and Surgical Journal, 1870.

"Anæsthetic Inhalation." Boston Medical and Surgical Journal, 1870.

"Medical Education in America." Address before the Massachusetts Medical Society. Boston, 1871.

"Death by Chloroform, and Alleged Death by Ether." Boston Med and Surg. Jr., 1872.

"Alleged Death from Ether." Boston Medical and Surgical Jour., 1873.

"The History of Anæsthesia." New York Times, 1873.

"The History of Anæsthesia." New York Tribune, 1873.

"Turbinated Corpora Cavernosa." Boston Medical and Surgical Jour., 1875.

"The True Neck of the Femur: its Structure and Pathology." Boston Medical and Surgical Journal, 1875.

"A History of the Discovery of Modern Anæsthesia. A Century of American Medicine." Philadelphia, 1876.

"New Methods in the Treatment of Extrophy of the Bladder, and of Erectile Tumors." Boston Medical and Surgical Journal, 1876.

"On Dislocation of the Hip." The Lancet, 1878.

"Lithotrity by a Single Operation." The American Journal of the Medical Sciences, 1878.

"Rapid Lithotrity with Evacuation." New York Medical Record, 1878.

"Litholapaxy." Papers in The Lancet, 1878, 1879; Boston Medical and Surgical Journal, 1879; New York Medical Record, 1879.

"Litholapaxy; or Lithotrity with Immediate Evacuation." Transactions of the Clinical Society of London, Vol. xii, 1879.

"The Modern Art of Promoting the Repair of Tissue." Boston Medical and Surgical Jour., 1879.

"Litholapaxy. An Improved Evacuator." Boston Medical and Surgical Journal, 1880.

"Litholapaxy." Boston Medical and Surgical Journal, 1880.

"The Code of Ethics of the Massachusetts Medical Society." Boston, 1880.

"Modern Lithotrity." Transactions of the International Congress of Physicians and Surgeons. London, 1881.

"Litholapaxy." Boston Medical and Surgical Journal, 1882.

"Lithotrity with Evacuation." Boston Medical and Surgical Jour., 1882.

"Radical Cure, Without Operation, of a Large and Inflamed Umbelical Hernia." Boston Medical and Surgical Journal, 1882.

"A Case of Disease of the Liver." Boston Medical and Surgical Journal, 1882.

"A Simplified Evacuator for Litholapaxy." Boston Medical and Surgical Journal, 1883.

"Fees in Hospitals." Boston Medical and Surgical Journal, 1889.

"An Old Portrait of a Surgeon." Boston Medical and Surgical Journal, 1889.

EMINENT ALUMNI

(CONTINUED)

CHAPTER XXXI.

EMINENT ALUMNI (CONTINUED).

CHARLES EDWARD BUCKINGHAM.

The subject of this sketch was born in Boston, June 7th, 1820. He was graduated from Harvard A. B. 1840, and from the Medical School in 1844.

In his early professional career Buckingham was often in sore straits; his means were small, and he was without family influence and social connections. These difficulties did not discourage him; on the contrary he was stimulated by necessity to make his own way. The struggle, however, left its scars, and one finds him afterwards a bitter and sometimes a censorious critic of men possessing those advantages which he had lacked. No one, however, was more just than he in giving praise to those whom he thought had honestly won position. Few men of his time wielded a more trenchant pen, or were more ready in debate than he. He inherited from his father, an able journalist, that vigorous style, opinions of his own, and a fearlessness in expressing them. He was an honorable man who often exhibited an earnestness which defeated criticism, and unmasked double dealing.

In the establishment of the Boylston Medical School in 1850, Buckingham took an active part. With him in that enterprise were Bacon, Walker, Clarke, Thayer, Dalton, Williams and Kneeland, all of whom became eminent, while several were teachers later in the Harvard School. Among them Buckingham stood high. In 1865, October 20, he was chosen Adjunct Professor of the Theory and Practice of Physic at

Harvard and later (1868, August 29) he was elected Professor of Obstetrics and Medical Jurisprudence. In that chair he was an instructive and impressive teacher. He had accumulated material for a treatise on Obstetrics which he hoped to publish, but death intervened on the 19th of February, 1877.

Besides his strictly professional duties in a large practice which perseverance and merit had won for him, Buckingham was greatly interested in public affairs. In the organization of the Massachusetts Board of Health, and in protective measures against the introduction and spread of smallpox he contributed many able, convincing articles to the daily press, as well as to the medical journals. In the organization of the Boston Medical Library Association in 1875 he was active, and was elected first vice-president. At the time of his death he was Consulting Physician to the Boston City Hospital, and the Boston Lying-in Hospital; a Fellow of the London Obstetrical Society, a member of the American Gynecological Society, corresponding member of the Philadelphia Obstetrical Society, and a member of the Massachusetts Medical Society, before which he delivered the annual discourse in 1873. The Harvard Corporation termed him "a skillful physician and an accomplished and devoted teacher."

EDWARD HAMMOND CLARKE.

Edward H. Clarke was born at Newton, Massachusetts, February 2nd, 1820. He entered Harvard College at the age of sixteen, but was obliged to leave on account of illness, and consequently was not graduated until 1841. He was studious, and led his class. He was graduated M. D. at the University of Pennsylvania in 1846, where he had gone on account of a weak constitution. Holmes says* that Clarke was the only "first scholar" he ever knew to study medicine. During both

* Letter to S. Weir Mitchell, March 27th, 1871.

college and professional courses Clarke was restricted by his physician to two or three hours of study a day. From this restriction he acquired such unusual powers of concentration that he was able in later life, when teaching, to prepare a *new* lecture of an hour in less than an hour's time. Those who remember the brilliancy of his lectures say that such a performance was very remarkable.

After graduating in medicine Clarke studied in Europe, where he devoted special attention to the diseases of the ear. Upon returning to Boston he and Henry I. Bowditch, with some others, revived the Boston Society for Medical Observation which had been moribund for eight years. In 1850 Clarke was the leader in organizing the Boylston Medical School as a rival to the Harvard School. His attempt to obtain legislative authority to grant degrees was unsuccessful, but it had a good effect upon Harvard. It stimulated her teachers, and they found in Clarke a formidable rival. In fact, it was thought wise to take him into the Harvard School, a great gain for Harvard, and a death blow to the Boylston School. His appointment was made at the December 30th, 1854, meeting of the Corporation, when Jacob Bigelow resigned his dual office of Professor of Materia Medica and Lecturer on Clinical Medicine.* Clarke held the professorship of Materia Medica until April 8th, 1872. Upon his resignation he gave to the School all the plates and specimens which he had used as illustrations in his lectures, a valuable gift.

As a teacher he aimed at thoroughness. Nothing was accepted upon tradition alone. He taught his pupils to question everything, to seek the cause, no matter how far hidden or remote. Possessed of a fine gift of speech, he made his

* George Cheyne Shattuck was elected Professor for the vacancy in Clinical Medicine.

lessons direct and effective. With a quiet, unassuming manner, he carried his students straight and rapidly through a mass of work which surprised even those who knew his diligence. In this his love of study, his quick judgment, his decision and his honesty were transmitted to his hearers.

E. H. Clarke never held a position in any of the hospitals, although earnestly pressed to accept one at the Boston City Hospital when it was established. His value to the School was as a teacher. So great was his success that his lecture room was always filled, though the hour assigned him was eight in the morning. Clarke's lectures today might be classed under "Therapeutics," for he dealt with such questions as the use of light, heat, air, the effects of imagination, etc., etc., in the treatment of disease.

His writings, though few, show his learning and wisdom. "Sex in Education," published in 1873, and "The Building of a Brain," published later, are full of advanced thought. His work on "Bromides," in which Robert Amory was associated with him remains a standard. His last paper was that on "Practical Medicine," 1876. Through his lectures he was able to illustrate the wide experience gained in one of the most extensive practices of his day. In such practice he was the quiet, attentive, judicious adviser, inspiring his patients with such hope as had carried himself successfully to health when his physical state seemed to indicate an early death. Nor were his works limited to his teaching and healing. He was an indefatigable worker as Park Commissioner for the City of Boston, and gave valuable time to other public questions. He was also a member of the American Academy of Arts and Sciences. In 1872 Clarke was chosen an Overseer of Harvard College, and he held the position at the time of his death, November 30th, 1877. "The good physician, strong thinker, public hearted citizen is gone. His example remains: . . . as an instructor he had the admiration of his pupils"; and

Holmes said of him that he would have become eminent in any profession.

HENRY WILLARD WILLIAMS.

Henry W. Williams was born in Boston, Massachusetts, December 11th, 1821. As a youth he went into a business house, and later held the position of secretary and publishing agent for the Massachusetts Anti-Slavery Society, in which Phillips, Garrison and Edmund Quincy were active. While he was in this latter position he began the study of medicine (1844) at the Harvard Medical School. After two courses there he spent three years in Europe, where early he took up the study of diseases of the eye. Ophthalmic surgery had reached a high plane, while ophthalmology, as we understand it, was a comparatively undeveloped science. To ophthalmology, then, Williams directed his energies, and was fortunate in having such famous teachers as Sichel, Desmarres, Jaeger, Rosa, Dalrymple, Lawrence, Dixon, Critchitt, and Bowman.

Williams was graduated in medicine at Harvard in 1849, and soon afterwards was appointed Assistant Physician to the Cholera Hospital at Fort Hill, Boston. From 1849-51 he was District Visiting Physician to the Boston Dispensary. In 1850 he was made Instructor in the Theory and Practice of Medicine at the Tremont Medical School. In 1850 also he was fortunate in having sufficient clinical material from the city institutions then in charge of C. E. Buckingham to give a course of instruction on diseases of the eye to a class of Harvard Medical students. This course he was able to continue for many years through the courtesy of Buckingham. He was soon elected Surgeon, and then Ophthalmic Surgeon to the Dispensary. The reputation thus gained led Williams to devote his whole time to ophthalmology, a specialty he ever

after followed. Those years in the 50's were notable in the history of ophthalmology. Helmholtz's newly perfected ophthalmoscope was giving surgeons their first view of the marvelous structure and workings of the fundus of the eye. A new pathology and physiology of the eye were created. Old and experienced teachers were going back to a second term of pupilage, which meant the undoing of many chapters in their former notions of pathology, diagnosis and treatment. Few inventions so revolutionized accepted truths as did the introduction of the ophthalmoscope. No means was ever so effective in popularizing a language, for Hemholtz's invention meant a study of German for hosts of students.

In the readjustment of discoveries in the new laws of optics, new technique in operations, and new applications of old rules Williams took a leading part. Naturally conservative, he brought to bear upon the situation a broad-mindedness and independence of judgment which soon won him a prominent place. He was a close observer, and a keen discriminator of teachers and methods. He never allowed himself to be carried away by the temporary popularity of this school of practice, nor by that method of operating, but he listened to all and chose the best from each. In such decisions he enjoyed a knowledge of the history of former methods, which he was particular to emphasize should be understood before taking up the new. In this way he developed an acquaintance with the subject, which at conventions, made his opinion and utterances almost law.

In operations on the eye Williams was remarkably skillful. Under the teachers of the Daviel method he came to recognize the superiority of extracting cataract over the brilliant but uncertain operation of reclination, and in his long career he seldom departed from the former method. In this work Williams was exceptionally competent, and was one of the first (1853), if not the first, to advocate and employ etherization

as a general practice in cataract extraction. As to the question of method in these operations, Williams adhered to the classical flap-incision as against iridectomy. He devised and adopted (1865) the bold and original procedure of inserting a delicate suture at the vertex of the flap, thereby hastening the closure of the wound, and lessening the risk of secondary prolapse of the iris. He lived to see ophthalmic surgery return to his line of procedure in all these matters and the experience of latter years confirms the wisdom of his course.

In the treatment of iritis it had been customary to employ mercury in large doses up to pronounced ptyalism. In August, 1856, Williams read a paper before the Boston Society for Medical Observation, entitled "Treatment of Iritis without Mercury." This essay became memorable, and inaugurated a radical reform in ophthalmic therapeutics. For the mercury, Williams substituted a strong solution of atropine applied locally. He gave only such internal treatment as iron, quinine, etc., general tonics. The choice of a limited number of remedies in this new treatment marks his wisdom as well as his conservatism. He says: "It may seem that in the treatment of these cases routine has been too closely followed, but, in the trial of one *plan* of treatment instead of another of directly opposite character, it was desirable, in order to avoid uncertainty as to the results obtained, to deviate as little as possible from a fixed course. It is by no means assumed that mercurials or other antiphlogistic measures should be absolutely discarded from the treatment of this disease; but the results of these cases, many of which were of unusual severity, prove that it is by no means necessary to resort, immediately, to this use in all instances." This is a cautious statement, yet in the treatment thus inaugurated by Williams the routine practice of mercurialization in the treatment of iritis was broken up, the efficacy of atropine as a mydriatic in iritis was established, as was its power to relieve pain and

promote healing. Williams proved further, that even in gumma of the iris the local use of atropine and the internal use of potassium iodide effect a cure.

As a writer Williams was prominent. His first work of an extensive nature was his translation of Sichel's work (1850), "Spectacles; Their Uses and Abuses in Long and Short-sightedness." In 1862 he published "A Practical Guide to the Study of the Diseases of the Eye." In 1865 he won the Boylston Prize with his essay, "Recent Advances in Ophthalmic Science." In 1881 his largest work, 476 pages octavo, entitled "The Diagnosis and Treatment of the Diseases of the Eye," was published. In these works he shows conclusively that he is a general practitioner first, then a specialist. His language is so simple, his diagrams so plain, and his descriptions so full and so free from technicalities, that the book reads much like a personal letter from the physician to his colleague. The repeated demands for new editions of this work show how timely was his presentation of the subject.

Although he was identified with the special branch of ophthalmology, Williams never lost his interest in general medicine. He attended regularly the meetings of the various medical societies of which he was a member and took an active part in the discussions. In the Suffolk District Medical Society he was secretary (1851), censor (1854), vice-president (1873) and president (1875). In the Massachusetts Medical Society he was councillor (1865), anniversary chairman (1867), and president (1880-81). He belonged also to the Boston Society for Medical Improvement, the Boston Society for Medical Observation, and the Boston Medical Association. He was the founder and for many years the president of the Massachusetts Medical Benevolent Society; secretary and treasurer of the Boston Medical Book Club; trustee of the Boylston Medical Prize Fund; president of the Association of Physicians and Surgeons of the Boston City Hospital.

He was a member of the American Medical Association; the International Medical Congress of Philadelphia in 1876; Honorary Fellow of the Rhode Island Medical Society, and of the New Hampshire Medical Society; Honorary Fellow of the Edinburgh Medico-Chirurgical Society, and of the Heidilberger Ophthalmologische Fesellschaft. Other bodies with which he was affiliated were the American Academy of Arts and Sciences, the Boston Society of Natural History, the Society of Arts of the Massachusetts Institute of Technology, the American Association for the Advancement of Science, the Essex Institute of Salem, Massachusetts, the Thursday Evening Club and the Examiner Club. He was trustee and treasurer of the Boston Library Society, a member of the Boston Young Men's Benevolent Society; the Bostonian Society, as well as of Church and patriotic societies,—a long list. In 1864 he was one of the nineteen physicians who organized the American Ophthalmological Society, and for twenty years he was either its vice-president or president. At the International Congress of 1872 in London, Williams was one of the vice-presidents, and it was mainly through his efforts that that body met in New York in 1876.

Williams' successful career as a teacher began in 1850 as Clinical Instructor at the City Institutions in South Boston, and from this followed his appointment as Surgeon, and later as Surgeon and Ophthalmic Surgeon to the Boston Dispensary. Upon the opening of the City Hospital, of which he was one of the founders, in 1864, he was appointed Ophthalmic Surgeon. He was for many years also Ophthalmic Surgeon to the Perkins Institution. In 1866 he was elected by the Harvard Corporation, University Lecturer on Ophthalmology, and on October 19th, 1871, he was made Professor of Ophthalmology in the Medical School. He resigned in 1891. The Corporation voted that in accepting the resignation they wish to "acknowledge their great obligation to Dr. Williams for

his twenty years of honorable service as Professor of Ophthalmology, and for a previous service of five years as University Lecturer on the same subject; and that they see with satisfaction that during this period the subject to which Dr. Williams had devoted himself has won an important place among the studies of the Medical School."

In nearly all those appointments Williams was the first person to fill the positions, most of which were created for him. As a teacher he was lucid, practical, and had the happy faculty of accommodating his language to the requirements of his particular class of hearers, whether students, practitioners or laymen. His influence was great, and the lessons he taught were often the sum total of what many practitioners ever were to know of the diseases and treatment of the eye. In the conventions of his associates he was an important person, with a forcible, persuasive way of speaking and presiding which often made final his opinions and decisions. He had always the greatest consideration for the rights and privileges of his associates, and so won their regard and respect. With a mind virile, set, yet consistent, he naturally met opposition, but his untiring patience, his conservativism, his conscientiousness in the discharge of his duties always secured the admiration of his opponents. In the Medical Faculty he was opposed to the entrance of women into the practice of medicine, while in the suppression of quackery he was relentless. It was said of him that he never grew old, and was constantly adding to his store of knowledge.

His ability as an operator deserves special mention. He had few equals; "To see him extract a double cataract, first with the right hand and then with the left, with equal precision and grace, was a surgical *coup* never to be forgotten," is the opinion of D. W. Cheever. Williams sent the following interesting letter to the President and Fellows of Harvard College on April 22, 1891:

"When compelled by illness, in 1891, I resigned the position I had for twenty years held as your first Professor of Ophthalmology, your kind assurance of 'obligations for twenty years of honorable service,' and of 'seeing with satisfaction that during this period the subject had won an important place among the studies of the Medical School' were most grateful to me.

"My experience in these years of teaching at a period when our knowledge of the functions of the Eye and our resources for promoting its well being and usefulness far surpassed anything before attained; impressed me with the importance of the Department charged with the welfare of the Organ of Vision so superlatively essential to scholars; and the instrument by the aid of which the major part of all which increases human welfare and happiness is accomplished.

"Therefore, in the hope of continuing to be useful as a promoter in this promising field, I offer to the University twenty-five thousand dollars, as a special fund for the maintenance of a Professorship of Ophthalmology—with the proviso that during the life time of my wife the income of the Fund shall go to her use, payable to her order. * * * *"

It was voted to establish the "Henry Willard Williams Fund."

The last public appearance of Henry W. Williams was at the meeting of the American Academy of Arts and Sciences on May 8th, 1895, when he read an obituary notice of Professor Herman von Helmholtz. Soon after this his health began to fail rapidly and he died in Boston on June 13, 1895.

Bibliography.

1849, Dec. 24. Report of the Committee on Internal Health on the Asiatic Cholera, together with a report of the City Physician on the Cholera Hospital. The Topographical Statistics by H. W. Williams.

1850. "Spectacles: Their Uses and Abuses in Long and Shortedness." By J. Sichel, M. D. Translated from the French, by permission of the author, by Henry W. Williams, M. D. Boston.

1850, June 26, July 3. "Operations for cataract: (1) Microphthalmos complicated with Congenital Cataract in both Eyes—Operation; (2) Extraction of Cataract by Section of the superior half of the Cornea; (3) Operation for Cataract with Two Instruments, through the Cornea and Sclerotica at the same time." Bost. Med. & Surg. Jour., xlii, 21, 22.

1851, March 24. "Case of Hypospadias." Proc. Boston Soc. for Medical Improvement, Vol. i, p. 149.

1851, April 28. "Dislocation of the Crystaline Lens without Rupture of the Capsule." Proc. Boston Soc. for Medical Improvement, Vol. i, p. 154.

1851, June 18. "On the Value of the Operation of Extraction of Cataract, and on the Use of Anaesthetic Agents in Ophthalmic Surgery." Boston Med. and Surg. Jour., xliv, 20.

1851, July 14. "Traumatic Injuries of the Iris. Proc. of the Boston Medical Improvement," Vol. i, p. 164.

1851, Sept. 22. "Pracentesis Thoracis in a case of Acute Pleurisy." Proc. Boston Soc. for Medical Improvement, Vol. i, p. 176.

1852, Aug. 9. "Carcinomatous Disease of the Uterus and Vagina." Proc. Boston Soc. for Medical Improvement, Vol. i, p. 258.

1852, Sept. 8. "Encysted Tumor above Lachrymal Sac." Boston Med. & Surg. Jour., xlvii, 6.

1852, Oct. 6. "Carcinoma Oculi—Extirpation of the Eyeball." Boston Med. & Surg. Jour., xlvii, 10.

1852, Dec. 22. "Cataract in a Dog; Successful Operation under the Influence of Ether." Boston Med. & Surg. Jour., xlvii, 21.

1853, Jan. 4. "Cataract from Traumatic Injury." Proc. Boston Soc. for Medical Improvement, Vol. i, p. 305.

"Scrofulous Disease of Testicle." *Ibid.*, p. 305.

1853, Feb. 28. "Malignant Disease of Eyeball and Tissues of the Orbit.—Extirpation. Death from Hæmorrhage during the Operation." Proc. of Boston Soc. for Medical Improvement, Vol. i, p. 314.

1853, April 30. An Address delivered before the Suffolk District Medical Soc. at its Fourth Anniversary Meeting, Boston, April 30, 1853.

1853, May 23. "Fluid Congenital Cataract." Proc. Boston Soc. for Medical Improvement, Vol. i, p. 339.

1853, June 13. "Operation for Cataract on a Patient aged eighty-eight." Proc. Boston Soc. for Medical Improvement, Vol. i, p. 341.

"Anencephalous Fœtus." *Ibid.*, p. 346.

1853, Nov. 23. "Extraction of Cataract, the Patient being under the Influence of Ether. Subsequent Presence and Absorption of Air in the Anterior Chamber." Boston Med. and Surg. Jour., xlix, 17.

1853, Dec. 26. "Single Congenital Cataract." Proc. Boston Soc. for Medical Improvement, Vol. ii, p. 39.

1854, Feb. 27. "Pathological Changes of the Cornea, following the Affection of the Fifth Pair of Nerves." Proc. Boston Soc. for Medical Improvement, Vol. ii, p. 51.

"Removal of Central Opacity of Cornea." *Ibid.*, p. 53.

1854, Aug. 14. "Operations for Removal of Opacities of the Cornea." Proc. Boston Soc. for Medical Improvement, Vol. ii, p. 129.

1854, Aug. 28. "Fracture of Os Hyoides produced by a Fall—Suffoca-

tion from Effusion around Glottis—Tracheotomy—Resuscitation by Artificial Respiration." Proc. Bost. Soc. Med. Improvement, Vol. ii, p. 153.

1854, Nov. 13. "Dislocation of the Crystalline Lens." Proc. Boston Soc. for Medical Improvement, Vol. ii, p. 162.

1854, Dec. 11. "Spontaneous Dislocation of the Crystalline Lens in Both Eyes, without Loss of Transparency. Frequent Prolapse of the Lens into the Right Anterior Chamber." Proc. Boston Soc. for Medical Improvement, Vol. ii.

1855, Feb. 26. "Dislocation of the Crystalline Lens, Resulting from a Blow on the Eye received some time previously." Proc. Boston Soc. for Medical Improvement, Vol. ii, p. 189.

1855, March 12. "Cancer of the Stomach." Proc. Boston Soc. for Medical Improvement, Vol. ii, p. 194.

1855, May 3. "Two Cases of Infantile Syphilis." Read before the Boston Soc. for Medical Observation, April 16, 1855. Bost. Med. and Surg. J., lii, 13.

1855, June 11. "Artificial Pupil." Proc. Boston Soc. for Med. Improvement, Vol. ii, p. 239.

1856, April 28. "Crystals of Cholesterine in the Eye." Proc. Boston Soc. for Medical Improvement, Vol. ii, p. 341.

1856, June 9. "Vesication of the Epithelial Layer of the Cornea—Absence of Sensibility to Irritation." Proc. Boston Soc. Med. Improvement, Vol. iii.

1856, Aug. 21, 28, Sept. 4. "Iritis:—Non-mercurial Treatment." Read before the Boston Soc. for Medical Observation, Aug. 4, 1856. Boston Med. and Surg. Jour., lv, 3, 4, 5.

1857, Feb. 26. "Pyramidal Cataract: Operations by Division and Extraction." Boston Med. and Surg. Jour., lvi, 4.

1857, Sept. 28. "Disease of the Eye, probably Cancerous." Proc. Boston Soc. for Medical Improvement, Vol. iii, p. 138.

1857, Dec. 3. "Operations for Artificial Pupil." Boston Med. and Surg. Jour., lvii, 18.

1857, Dec. 14. "Remarkable Changes of the Internal Structures of the Eye." Proc. Boston Soc. for Medical Improvement, Vol. iii, p. 181.

1858, Sept. 23. "Six Cases of Successful Operation, in one Family, on Children born Blind." Boston Med. and Surg. Jour., lix, 8.

1858, Dec. 27. "Dislocation of the Transparent Crystalline Lens into the Anterior Chamber." Proc. Boston Soc. for Med. Improvement, Vol. iii, p. 307.

1859, March 17. "On the Treatment of Certain Diseases of the Lachrymal Passages." Read before the Boston Society for Medical Observation. Boston Med. and Surg. Jour., lx, 12.

1859, April 21. "Ulceration of the Cornea." Read before the Boston Soc. for Medical Observation. Boston Med. and Surg. Jour., lx, 12.

1859, June 27. "Ossification of the Crystalline Lens." Proc. Boston Soc. for Med. Improvement, Vol. iv, p. 49.

1860, Aug. 2. "Traumatic Injury of Both Eyes—Operation for Restoration of Vision." Boston Med. and Surg. Jour., lxiii, 1.

1861, June 10. "Ophthalmia Neonatorum." Proc. Boston Soc. for Medical Improvement, Vol. iv, p. 218.

1862. "A Practical Guide to the Study of the Diseases of the Eye." Boston.

1862, April 28. "A Case of Acute Glaucoma—Performance of Iridectomy, with Complete Restoration of Vision." Proc. Boston Soc. for Medical Improvement, Vol. v, Appendix.

1863, Jan. 1. "Case of Glaucoma Relieved by Iridectomy." Read before the Boston Soc. for Med. Improvement, Dec. 22, 1862. Bost. Med. and Surg. Jr., lxvii, 22.

1863, July 30, Aug. 13, 27, Sept. 3, 17, 24. "European Ophthalmic Institutions—Six letters from Europe." Bost. Med. and Surg. Jr., lxviii, 26; lxix, 2, 4, 5, 7, 8.

1863, Dec. 31. "Various Applications of the Operation of Iridectomy." Read before the Boston Soc. for Med. Observation. Boston Med. and Surg. Jour., lxix, 22.

1864. "Cataracts with Unusual Toughness of the Capsule." Proc. Boston Soc. for Medical Improvement, Vol. v, p. 121.

1864, Jan. 28. "The Properties and Uses of the Calabar Bean." Translated from the Annales d' Oculistique. Boston Med. and Surg. Jr., lxix, 26.

1864, Dec. 1. Report of Operations in the Dept. of Ophthalmic Surgery at the City Hosp. of Boston, under the care of Dr. Williams, for three months, ending Aug. 30, 1864. Boston Med. and Surg. Jour., lxxi, 18.

1864, Dec. 15. "Case of Glaucoma of more than Three Months' Standing, in which Perception of Light had been lost, Successfully Treated by Iridectomy." Read before the Boston Soc. for Med. Improvement, Nov. 28, 1864. Boston Med. and Surg. Jour., lxxi, 20.

1865, Jan. 26. Report of Operations in the Department of Ophthalmic Surgery at the City Hospital of Boston, under the care of Dr. Williams for four months ending Dec. 31, 1864. Bost. Med. and Surg. Jour., lxxi, 26.

1865, Feb. 23. "Early Diagnosis of Puerperal Inflammation of the Eyeball." Read before the Boston Soc. for Med. Improvement, Feb. 13, 1865. Boston Med. and Surg. Jour., lxxii, 4.

1865, March 13. "Hereditary Syphilis." Proc. Boston Soc. for Med. Improvement, Vol. v, p. 169.

1865, May 4. Report of Operations in the Ophthalmic Dept. of the City Hosp. of Boston, under the care of Dr. Williams, for the three months ending April 1, 1865. Boston Med. and Surg. Jour., lxxii, 14.

1865, Aug. 24. "Nearsightedness a Disease, and not merely an In-

firmity." Read before the Soc. for Med. Improvement, Aug. 14, 1865. Boston Med. and Surg. Jour., lxxiii, 4.

1865, Aug. 31. "Removal of a Cataract of Eighty-three Years' Standing, from a Man Ninety-three Years Old." Bost. Med. and Surg. Jour., lxxiii, 5.

1866. "Recent Advances in Ophthalmic Science." Boylston Prize Essay for 1865. Boston. 1866.

1866. "Remarkable Voluntary Power over the Muscles of the Eyeball Acquired by Training." Royal London Ophthalmic Hospital Reports, Vol. v, pt. 3, 1866.

1866, Feb. 12. "Penetration of the Eye by a Foreign Body and its Discovery at the Fundus of the Globe by means of the Ophthalmoscope." Proc. Boston Soc. for Med. Improvement, Vol. v, p. 204.

1866, Feb. 22. "Spontaneous Dislocation of the Crystalline in Both Eyes—Subsequent Severe Symptoms in One Eye, requiring the removal of the Degenerated Lens by Out-scooping combined with Iridectomy." Boston Med. and Surg. Jour., lxxiv, 4.

1866, June 12. "Suture of the Flap after Extraction of Cataract." Read before the American Ophthalmological Society, June 12, 1866. Transactions of the Ophthalmological Society, 1866.

1866, July 26. "Some Conservative Measures required in Certain Diseases of the Eye." Read at the Annual Meeting of the Massachusetts Medical Society, Boston, May, 1866. Boston Med. and Surg. Jour., lxxiv, 26.

1866, Aug. 30. "An Improvement in the Form of Probes for the Lachrymal Passages." Read before the Boston Soc. for Med. Improvement, July 9, 1866. Boston Med. and Surg. Jour., lxxv, 5.

1867. "A Practical Guide to the Study of Diseases of the Eye." 2d Ed., Revised and Enlarged. Boston, 1867.

1867. "Use of a Suture of the Cornea to Close the Wound after Cataract Extraction." Royal London Ophthalmic Hospital Reports, Vol. vi, pt. 1, 1867.

1867, Feb. 28. "Report of the Operations performed in the Ophthalmic Department of the City Hospital, Boston, during the year ending Dec. 31, 1866." Boston Med. and Surg. Jour., lxxvi, 4.

1868. "Optical Defects in School Children." Read before the Massachusetts Teachers' Association. Mass. Teacher, 1868.

1868, July 21. "Modification of Probes for the Lachrymal Passages." Read before the American Ophthalmological Society, July 21, 1868. Transactions of the Am. Ophthalmological Society, 1868.

1868, July 21. "Suture of the Wound of Cornea after Flap Extraction —Report of Forty-four Cases." Read before the American Ophthalmological Soc., July 21, 1868. Transactions of the American Ophthalmological Society, 1868.

1869, Feb. 22. "Interesting and Unusual Cases of Traumatic Injury of the Eye." Proc. Boston Soc. for Med. Improvement, Vol. vi, p. 79.

1869, Aug. 23. "Dislocation of the Lens through a Rupture of the Sclerotica." Proc. Boston Soc. for Medical Improvement, vol. vi, p. 118.

1870. First Medical and Surgical Report of the Boston City Hospital (for five years ending Dec. 31, 1869). Boston, 1870—Ophthalmic. Rept.—Table of Ophthalmic Operations—Table of Ophthalmic Out-Patients—by H. W. Williams, M. D.

1870, Jan. 6. "Two Cases of Double Spontaneous Dislocation of the Lens." Boston Medical and Surgical Jour., New Series, v (lxxxii), 1.

1870, Feb. 17. "New Form of Crayons of Sulphate of Copper." Boston Med. and Surg. Jour., New Series, v (lxxxii), 7.

1870, March 31. "Exophthalmos with Intracranial Disease—Death—Autopsy." Boston Med. and Surg. Jour., New Series, v (lxxxii), 13.

1870, May 9. "Cretaceous Degeneration of the Crystalline Lens." Proc. Boston Soc. for Med. Improvement, Vol. vi, p. 148.

1871. "Our Eyes and How to Take Care of Them." Boston, 1871.

1871, Aug. 31. "The Causes and Prevention of Nearsightedness." Translated from the *Wiener Medizinische zeitung*. Boston Med. and Surg. Jour., New Series, viii (lxxxv), 9.

1871, Dec. 7. "Enucleation of the Eyeball." Boston Med. and Surg. Jour., New Series, x (lxxxvii), 23.

1872, Dec. 5. "Improvement in Cataract Operations." Boston Med. and Surg. Jour., New Series, x (lxxxvii), 23.

1873, July 3. "Tattooing the Cornea." Boston Med. and Surg. Jour., lxxxix, 1.

1873, July 17. "Report of Twenty-five Cases of Median Flap Extraction." Read before the American Ophthalmological Society, July 17, 1873. Transactions of the American Ophthalmological Society, 1873.

1873, Oct. 16. "Puerperal Amaurosis; its Importance as a Symptom." Boston Medical and Surgical Journal, lxxxix, 16.

1874, March 26. "Decussation of the Optic Nerves, and Hemiopia." Translated from the Archiv fur Ophthalmologie. Bost. Med. and Surg. Jour., xc, 13.

1874, Oct. 29. "Serious Pathological Changes in Myopic Eyes." Boston Med. and Surg. Jour., xci, 18.

1875, Jan. 28, March 11. "Babies' Sore Eyes." Boston Med. and Surg. Jour., xcii, 4, 10.

1875, July 22. "Some Peculiar Phenomena attending a Case of Sudden Temporary Loss of Hearing and Sight." Read before the American Ophthalmological Society, July 22, 1875. Transactions of The American Ophthalmological Society, 1875.

1875, Oct. 11. "Foreign Body in the Eye." Proc. of the Boston Society for Medical Improvement, Vol. vii, p. 33.

1876, Sept. 5. "On the Comparative Value of Caustics and Astringents in the Treatment of Diseases of the Conjunctiva, and on the Best Mode of Applying these Remedies." Trans. of the International Medical Congress of Philadelphia, Philadelphia, 1877.

1876, Dec. 21. "The Origin and Causes of Nearsightedness." Extracted and Translated from Professor F. Arlt—"Uber die Urasachen und die Entstehung der Kurzsichtigkeit." Bost. Med. and Surg. Jour., xcv, 25.

1878, March 14. "Eserine and Philocarpine in the Treatment of Eye Diseases." Read before the Boston Soc. for Med. Improvement, Jan. 28, 1878. Boston Medical and Surgical Jour., xcviii, 11.

1878, July 25. "Extirpation of the Ossified Choroid without Enucleation of the Eyeball." Read before the American Ophthalmological Society, July 25, 1878. Trans. of the Am. Ophthalmological Soc., 1878.

1880, Jan. 22. "Neurotomy of the Optic and Ciliary Nerves as a Substitute for Enucleation of the Eyeball." Read before the Boston Soc. for Med. Improvement, Jan. 13, 1880. Bost. Med. and Surg. Jour., cii, 4.

1880, July 22. "Optico-Ciliary Neurotomy." Read before the American Ophthalmological Society, July 22, 1880. Trans. Am. Ophthal. Soc., 1880.

1881. "The Diagnosis and Treatment of the Diseases of the Eye." Boston, 1881.

1881, Jan. 27. "Continued Toleration of Foreign Bodies within the Eyeball, for Fifteen and Twenty-two Years." Boston Med. and Surg. Jr., civ, 4.

1881, June 16, 23. Addresses delivered at Saunders Theatre, Cambridge, and at the Centennial Dinner of the Mass. Medical Society, in Boston, June 7 and 8, 1881. Boston Med. and Surg. Jour., civ, 24, 25.

1882, Jan. 18. "Orbital Cellulitis as a Sequel of Facial Erysipelas." Boston Med. and Surg. Jour., cviii, 3.

1883, Oct. 17. Address of Welcome in Behalf of the Faculty on the Occasion of the Opening of the new Medical College Building on the One Hundredth Anniversary of the Foundation of the Medical School of the Harvard University. Addresses and Exercises at the One Hundredth Anniversary, etc., Cambridge, 1884.

1884, Dec. 18. "Apparent and Real Amaurosis." Read before the Boston Soc. for Med. Improvement, Dec. 8, 1884. Boston Med. and Surg. Jour., cxi, 25.

1885, Oct. 22, 29. "Simple Cataract Extraction." Boston Med. and Surg. Jr., cxiii, 17, 18.

1886. "The Diagnosis and Treatment of the Diseases of the Eye." 2d Ed., Boston, 1886.

1887, Oct. 20. "The Importance of Re-examinations as to the Accuracy of Vision of Railroad Employes and Mariners." Bost. Med. and Surg. J., cxvii, 16.

1889, May 23. "Franciscus Cornelius Donders—Biographical Notice." Proc. of American Academy of Arts and Sciences, Vol. xxiv, Boston, 1889.

1889, July 17. "Multiple Cysts of the Iris in Both Eyes." Read before the American Ophthalmological Society, July 17, 1889. Transactions of The American Ophthalmological Society, 1889.

1889, Nov. 16. "Advances in our Knowledge of some Cerebral, Ocular, and Intraorbital Lesions, which Facilitate the Diagnosis and Treatment of Important Diseases." Read in the section on Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889. Jour. of the American Medical Association, Nov. 16, 1889.

1891, May 26. "Alfred Hosmer, M. D. Biographical Notice." Proc. of the American Academy of Arts and Sciences, Vol. xxvi, Boston, 1891.

1892, May 24. "George Hinkley Lyman, M. D. Biographical Notice." Proc. of the American Academy of Arts and Sciences, Vol. xxvii, Boston, 1893.

1893, May 10. "Sir William Bowman, Baronet. Biographical Notice." Proc. of the American Academy of Arts and Sciences, Vol. xxviii, Boston, 1893.

1894, Sept. 13. "Death of Professor Helmholtz." Boston Med. and Surg. Jour., cxxxi, 11.

1894, Nov. 8. "The First Administration of Ether in Paris." Boston Med. and Surg. Jour., cxxxi, 19.

1895, May 8. "Hermann von Helmholtz. Biographical Notice." Proc. of the American Academy of Arts and Sciences, Vol. xxx, Boston, 1895.

FRANCIS MINOT.

Francis Minot was born in Boston, on April 12, 1821. His education was procured in the Boston Schools and at Harvard College. He was graduated from Harvard in 1841 (A. B.) and from the Medical School in 1844. He then spent a year or more studying in Europe. Both by inheritance and training, Minot was blessed with a highly cultured taste, and was an admirable example of the scholar and gentleman in medicine. He devoted himself to the forwarding of a broad training in medical education. His high ideals, however, did not carry with them any snobbishness or caste-making. On the contrary, they meant to him the fostering of consideration and charity for the defects of others. Wisely conservative, he exercised a remarkable tact which he combined with abundant resources. This

combination fitted him admirably for private practice, and made him a valuable hospital physician. Moreover, he had a happy sense of humor and a love of nature which greatly enhanced his value both as a teacher and practitioner. The following anecdote illustrates the man: Early in his professional career he was called to a young lady who had taken poison with suicidal intent. She refused to swallow an emetic. So Minot sent for two coal heavers from a neighborhood wharf on Charles Street, and, when they appeared, he gave his patient the choice of taking the emetic or being held by the coal heavers while it was poured down her throat. It is needless to add that the young woman took the emetic.

In 1859 Minot began a service which was to last twenty-seven years, as Visiting Physician to the Massachusetts General Hospital. From 1886 to the time of his death he was Consulting Physician there.

On October 26, 1869, the Harvard Corporation appointed Minot Instructor in the Theory and Practice of Medicine. On October 30th, 1871, he was made Assistant Professor, and at the same time was appointed Clinical Lecturer on Diseases of Women and Children, a new branch then established. On May 25, 1874, he was elected Hersey Professor of the Theory and Practice of Physic, and continued in that chair until September 1, 1891, when he resigned. Trinity College conferred the A. M. upon him in 1860.

Minot's wide attainments and large experience in both hospital and private practice made him a valuable teacher of medicine. By his associates he was frequently honored; he was treasurer of the Massachusetts Medical Society from 1863 to 1875. In 1878 he delivered the annual address before that body, his topic being "Hints in Ethics and Hygiene." He was a Fellow of the American Academy of Arts and Sciences, founder of the Massachusetts Benevolent Society and its treasurer, president (1889) of the Association of American Phy-

sicians, and president of the Massachusetts Emergency and Hygiene Association (1885-1895). He was a member also of the Boston Medical Improvement Society. In all these positions Minot exercised that tact and industry which I have mentioned. It was said of him that "There must always be something unusual in one who could do what he did in the way he did it. We have abundant examples of men who have achieved success, but whose methods and motives do not command our respect; his were of the best and highest." His writings were not confined to those medical subjects only in which he was especially interested, but covered a wide field. Among his publications were "The Importance of Estimating the Average Duration of Disease," "Cases of Pulmonary Congestion Followed by Recovery or Arrest of the Disease," and "Treatment of Acute Pneumonia." His death occurred at Readville, Massachusetts, on May 11, 1899, at the age of seventy-eight years.

JOHN CALL DALTON.

One of the boasts of the Harvard Medical School in the middle decades of the last century was that it had furnished more skilled and practical teachers of medicine than any other one medical school in the country. Among those eminent alumni perhaps no one is more prominent than John Call Dalton, Jr. The medical students of the College of Physicians and Surgeons of New York, when they see that great teacher's portrait in the large theatre of the College, should feel its inspiration.

Dalton was born in the little town of Chelmsford, near Lowell, Massachusetts, on February 2, 1825. New York particularly, and the medical profession generally, owes another debt to this country-town in that there too was bred Willard Parker, for many years a leader among medical teachers, and

JOHN CALL DALTON, M. D.

U. S. V. 1861.
A. B. 1844; M. D. 1847.

one of the founders of the New York Academy of Medicine. The Harvard Medical School claims him also.

John C. Dalton, Sr., the father of our subject, studied medicine at Harvard after his graduation from the College (1814), and was graduated M. D. in 1818. In this same year Rufus Wyman of Chelmsford, was appointed superintendent of the McLean Asylum, then just established at Charlestown. A mass meeting of the citizens of Chelmsford was called to take action upon his leaving that place, and it was voted that he be requested to name his successor. The extraordinary confidence which they had in Wyman was shown by a solemn pledge that they would admit into their fellowship and employ the man whom he should recommend. John C. Dalton, Sr., then but twenty-three years of age, was his choice. "No recommendation could have been more desirable and essential to success, and no appointment could have been more satisfactory and fortunate in its results to all parties." In 1831 the elder Dalton moved to Lowell, where he practiced for twenty-eight years. It was during this period that his sons conceived that love for medicine which was to bear fruit in after years. A fellow practitioner at Lowell said of Dalton, "As a physician he presents to the younger members of the profession an example worthy of study and imitation. He was an ardent lover of his profession, and sought, by careful study and investigation, to glean from every source those acquisitions which should enable him to take high rank among the first in his calling, not only by his medical brethren of the city, but which should cause him also to be recognized among the leading physicians of the State. With a fine personal appearance, accomplished manners, and a melodious voice, he united in himself those mental acquirements and personal habits which are essential to usefulness and popularity." There are to-day in Lowell charitable organizations founded and fostered by "Old Doctor Dalton;" and they bear

testimony to his keen interest in humanity and to his Christianity.

From his father the son imbibed a love for the medical profession, a high appreciation of its power of doing good, an eagerness to make himself acquainted with every improvement in medical science, to confirm every doubtful point in pathology, and to exhibit to others in the profession everything of special interest and importance. From his father, too, he inherited a thirst for knowledge, not for self-aggrandizement, but for the benefit of others. The son's life developed under such inspirations as these in a home which was a model of moral strength and purity; and we find him among those leading his class at Harvard College, where he was entered at the age of fifteen. In that class of '44 he was known as "the ideal member," and a brilliant future was foretold for him. He had already shown a decided preference for medicine, and after his graduation entered upon it at once.

In his second year at the Medical School he was appointed house-pupil at the Massachusetts General Hospital. This was the eventful year of 1846, when the first successful demonstration of ether in surgical operations was made. Dalton was a participant, and the mystery surrounding the nature of the compound used,* stimulated his curiosity and ambition. He was graduated M. D. at the Harvard School in 1847.

In the establishment of the cholera hospital at Boston, as well as in dealing with the sanitary and pathological questions connected with the outbreak of cholera in this country at that time, Dalton found problems which inspired him to devote his life to study and teaching rather than to practice. The report furnished at the close of the epidemic was written mainly by him, and it was illustrated by his drawings. This report

* The first ether used was disguised in the hope that it might be patented.

shows that a new light had arisen, that a more exact science was in hand.

In 1850 Dalton went to Paris, seeking a teacher able and willing to direct and encourage him in experimental physiology. Claude Bernard was there and taught him to experiment and prove, rather than to rely upon guesswork or the words of others. In America there were no trained students of physiology, and although there had been published here and there a paper upon some physiological problem, such papers were by general practitioners who followed the unfamiliar path a short way and then returned to their routine work. Dalton made a life study of physiology. He could announce no great discoveries, but he placed the means of proving or simplifying old observations within the reach of every student of medicine. Students were no longer obliged to take half their physiology from the word-of-mouth of their teachers, and the other half from the workings of their own imaginations. They were brought face to face with the phenomena of life.

So Dalton may be called the pioneer American physiologist. The discovery of ether suggested modes of illustrating physiological experiments, which Dunglison and Samuel Jackson felt justified in excluding, even in case they knew their value. Dalton had the courage of his enthusiasm, and demonstrations upon living animals were introduced into his laboratory. He was the first in America to do this. Then he plunged into research work. The idea of a physician sacrificing his practice for such work was a novelty here, and had Dalton been forced to practice it is probable that his achievements would have been developed more slowly if at all. But his idea in his own case was to divorce the study from the practice of medicine, and to devote his energies wholly to the former. So on his return home he made no attempt to gain a practice. In 1851 his essay on the "Corpus Luteum" received a prize

from the American Medical Association. This stamped him as an independent and careful investigator, and brought him the recognition of the Medical School of the University of Buffalo, whither he was invited (1852) to the chair of Physiology. He held the place until 1854, when he resigned in order to accept the Professorship of Physiology at the Vermont Medical College. His teachings of physiology at both these schools won for him a name on account of the novelty of using vivisection in the illustrations of his lectures. He also introduced impromptu drawings, in which he was unrivaled.

In 1859 Dalton accepted the Professorship of Physiology at the Long Island College Hospital, then just taking permanent form. He resigned in 1861 to enter the army. In the meantime (1854-55) he had given a course of lectures on physiology in the College of Physicians and Surgeons in New York, in the place of Alonzo Clark; and in 1855 he was appointed Professor of Physiology and Microscopic Anatomy there. At the College of Physicians and Surgeons he continued until his death, occupied successively as Professor of Physiology, Emeritus Professor, and President.

In 1860 Dalton published a "Treatise on Human Physiology," a text book long familiar to thousands of American physicians. At the time of its publication and for many years after, it was the best English work on physiology, and its influence upon medical teaching and thought has been very important. The book reached its seventh edition during the life of the author. Although this was a pioneer work, without a rival, and satisfactorily accepted as a text-book, the author's devotion to his subject was so intense that he never rested content, but strove to deserve more fully, if possible, the confidence that work had won for him. He often reminded the profession, "that fortunately an age of loose thinking, hasty generalization and foolish expression is also an age of

science, whose students are content to learn patiently and modestly, who never rush to conclusions, who record unerring and unchanging facts instead of formulating their own vain notions, and who refuse to announce results until they can present them as certainly as the engineer throws his bridge across the stream or pushes his tunnel to a fixed point on the other side of the mountain."

As might have been expected, Dalton's methods, new to America, brought upon him reproach, and even the threats of those who opposed vivisection under all circumstances. He met the attack manfully, and before legislative bodies as well as in the public press, maintained convincingly the position he had early assumed, that vivisection, as he practiced and taught it, was essentially humane. He had an intense earnestness and a fiery spirit, which his wide knowledge and deep convictions accentuated; and no opposition could withstand his skill and logic in marshalling these forces. Science owes him much for the battle he fought and won. No one else at that time could have done so well. His "Experimental Method in Medicine" may still be found an effective weapon against the attacks of latter-day fanatics. Dalton's other literary works all show his scholarly habit as well as his scientific attainments. One of his best productions is an essay on the "Sugar-making Functions of the Liver." In this Dalton did much to remove Davy's criticisms of Bernard's great discovery, and permanently to fix physiological opinion.

In the midst of such labors the outbreak of the civil war found him one of the first to enter the service. Failing to secure his friend S. Weir Mitchell to take over his duties as Professor of Physiology and Microscopic Anatomy in the College of Physicians and Surgeons, he hastily made other arrangements and, in April, 1861, went to Washington as surgeon of the 7th Regiment from New York. He accompanied his command in its "Washington Campaign," but re-

signed when the regiment returned to New York, "and looked for an opportunity of more permanent connection with the service." The office of Brigade Surgeon had now (1861) been established by act of Congress. Dalton presented himself for the required examination, and on August 3rd, 1861, was appointed Brigade Surgeon of Volunteers. This position later became that of Medical Director, and ranked among the highest medical appointments in the army. He was assigned to General Viele's brigade. Love of country was an inherited trait in the Dalton family. John C. Dalton, Sr., was over sixty-six years of age on the outbreak of the war, yet he worked unceasingly as a member of the Sanitary Commission, as well as in other departments which gave him opportunities. Once he happened to be present on the arrival of two hundred wounded men in the steamer "Daniel Webster," at Boston, and immediately offered his services to the Surgeon General. "He actually rode up State Street in an open ambulance at the head of the column on its way to the hospital, while many a young man has turned away in disgust from the service because he disliked his assigned position at some capital operation." So spoke Governor Andrew publicly on hearing of this spontaneous outbreak of patriotic zeal in one of the State's oldest and best physicians.

Besides John Call Dalton, Jr., the old man had three other sons in the service, one in the civil department, one in the military, and one other in the medical,—the last, Edward Barry Dalton. This son was graduated from Harvard College in 1855, and received his M. D. in 1858 at the College of Physicians and Surgeons. He was an Instructor at the Harvard Medical School in 1871-72, when on account of ill health he resigned. After the war he went to New York. There his rare executive ability brought order out of chaos in the Health Department of that city, and as Sanitary Commissioner he inaugurated reforms which did much for the health

and comfort of the people. Edward B. Dalton's classmate, Henry L. Higginson, on presenting "Soldiers' Field" to Harvard College in 1890, in commemoration of Dalton and five others, said:

"The last was a physician, by choice and by nature, if intelligence, energy, devotion, and sweetness can help the sick. After various services from the outstart till '64, he was put by General Grant in charge of the great camp at City Point in Virginia, where 10,000 sick and wounded men lay. Here he worked out his life-blood to save that of others. If I may turn to foot-ball language, he played 'full-back,' and no one ever reached the last goal if human power could stop him.

"After the end of the war New York City needed a vigorous medical officer to cleanse it and guard it against a threatened epidemic; and leading men turned to our friend for this work. General Grant was then in command of the army, and was asked to recommend this physician. But the General was weary of such requests, and refused without even knowing who the candidate was. 'But hear his name, at least,' these citizens said; and they told it to him. Grant at once wrote: 'Dr. Edward Dalton is the best man in the United States for the place!' And Dr. Dalton did one more public service and then settled into private life. Presently he died of disease brought on by exhaustion during the war."

John Call Dalton, Jr., served through nearly three years of the war, and resigned on February 14th, 1864. In the army he exhibited that capacity and thoroughness in the administration of the affairs of his office which were to win for him a high place of responsibility and trust in the world of science. The remarkable traits of these two brothers become more evident when you contrast the one with the other:

John Call Dalton was first and always a scholar. He early outgrew the bonds set by his masters, and acquired a knowledge of the classics which made him as familiar with the ancients as he was with his mother tongue. This love of literature never left him, and one finds the result in the purity and accuracy of his lectures, writings, and conversation. Although physiology was his great work he did not limit himself to that. He was a keen student of many other branches of science.

Edward Barry Dalton, his brother, though quick in acquiring knowledge, was essentially a man of action. He won the love and confidence of his associates; and a gentle, yet firm sympathy was characteristic of him, whether in the sick chamber, in the hospital or on the battle-field. He was a great organizer and administrator. Witness his planning of field-hospitals on a large scale, and his successes as chief of the Metropolitan Board of Health of New York city. As a teacher in the Harvard Medical School his charm of voice and manner, his high spirits, gaiety, and courtesy won the regard of his associates, and the love and devotion of his pupils. A cruel disease, contracted in the care of his fellow-men in war, robbed the Medical School and the profession of one who was fitted to attain a high place as a teacher and a practitioner of medicine. In October, 1870, he was appointed Visiting Physician to the Massachusetts General Hospital, but survived less than two years, and died at Santa Barbara on the 13th May, 1872.

Returning to New York in 1864, John Call Dalton immediately entered upon his duties in the College of Physicians and Surgeons, and was soon made full Professor of Physiology there, declining "all temptations to go elsewhere, lecturing, working, observing, experimenting and only tempted forth from the laboratory to take the place of Vice-President of the New York Academy of Medicine from 1874 to 77." During the long series of years which mark his active work in that great school, Dalton was distinctly and eminently a teacher. He combined in a most happy manner the scientific spirit with literary art and aptitude for instructing. To a thorough knowledge of his subject he added the skill of a successful experimenter, and his words never failed to attract and hold the attention of his hearers. S. Weir Mitchell wrote of him:

"He had, says a pupil, the 'teaching instinct,' thinking of class, of theme, of the questioning faces before him, but never of himself, or how he would appear. No side issue disturbed him, and he had the skill to make the difficult appear simple, and evidently rejoiced in his power to make things plain. Now and then some side-light gave a glimpse of his encyclopaedic knowledge, but he made no excursions for mere amusement's sake; all was clear, logical, and the manner of it earnest, yet lively. At times his illustrations were the inspirations of the moment, as when he showed the relations of the corona radiata in the brain to the base of the ganglia, he began to arrange hastily scraps of felt on the radiating fibres of a broom. He had the rare gift of making those who listened desire to become investigators. He made men think. Possibly lecture interests absorbed too much of him, but he really created a method of teaching his branch such as was before unknown among us."

Dalton had a mechanical facility and a manual skill which served him to good purpose in his lectures. To these gifts was added a dexterity in drawing which was truly artistic, as many of his illustrations show. He was methodical, cautious and reflective, and neither formed hasty opinions nor accepted opinions at second-hand. He verified patiently every hypothesis, and his decision when once announced usually withstood any amount of attack from others. There were few eminent men, however, then doing original research work, who met as little controversy as did he. With a just recognition of the labors and opinions of others, he never failed to give each man his due. He was led by an unselfish ambition to promote the progressive tendencies of his generation, and especially to advance the education of others in his special branch. As a representative teacher and leader in the great evolutionary changes of his time he has left a lasting record of love and fame.

Dalton was an active member of various local, state, and national medical and scientific bodies. In these he was esteemed, but with characteristic modesty and unselfishness he always refused office. His numerous articles in the Journals

and in Society Transactions show that he discharged faithfully his indebtedness in this line to the profession.

In 1883 he resigned the Chair of Physiology in order to devote his time to work as President of the College of Physicians and Surgeons. In that office his shrewdness, wisdom, and knowledge of the world were of immense service to the institution, and with it his name is inseparably linked. New buildings were erected, new curricula introduced, and many vexations and exacting questions of administration were solved. Such labors would have overcome a constitution less rugged than his.

The following extract from Dalton's last lecture given in the old building on Fourth Avenue and Twenty-third Street has historic interest:

"Now we meet in this building for the last time, and soon these lecture-rooms will be empty forever. Yet I remember that when we moved from Crosby Street in January, 1856, to this palace—we thought it a palace then—we believed that the College of Physicians and Surgeons had found here at last a permanent home. We had 200 students in 1856; there are 606 in our catalogue this year. We had seven professors then; we have seventeen now. The Faculty in 1856 was not great in numbers, but the members of it will always live in the history of the healing art in this country. What noble deeds and great achievements cluster about the names of Willard Parker, then our Professor of Surgery; Alonzo Clark, of Practice and Pathology; Prof. St. John, of Chemistry, and Prof. Gilman of Obstetrics! The present faculty are nearly all graduates of this college. I have seen them all sitting where you sit now. No better proof of the efficiency of the curriculum than to point to their careers.

"The two hundred young men of 1856 attended only three clinics a week; now there are ten. The college term was only from the middle of October to March 1; now it extends from October 1 to the middle of May. The examinations were then oral, now they are written, we had no specialists in those early days. In 1856 a noted optician was also a general practitioner."

Dalton's last contribution to science was his "Topographical Anatomy of the Brain" in 1885. In this he presents a

companion piece to his "Treatise on Physiology," and upon this last work his literary fame no doubt will rest. For this he prepared personally all the specimens, and followed with the closest care the various steps in the reproduction from the photographs. This is one of the best works in print on the gross anatomy of the brain surface and sections. In it the author brings into play all the powers of his skilful, well-trained eye, his ability for patient investigation and exact observation, and presents the results in that simple, happy style which made him so successful as a teacher. It was a fitting finish to a well rounded, useful, honorable career. He died in New York, February 12, 1889. The respect in which Dalton was held is well shown by the following appreciative words of his associates in the Union League Club, of New York:

"The following resolutions in honor of Dr. Dalton, prepared by Joseph H. Choate, were unanimously adopted at the regular monthly meeting of the Union League Club, last night:

"Resolved, That the members of the Union League Club have heard with deep regret the sudden and unexpected death of Dr. John Call Dalton, long an earnest and devoted member of the club, and one to whom its house has been for many years in large measure 'his home.'

"Brought into daily contact with him as many of us were, we hardly recognized, beneath his modest and unobtrusive bearing and manner, the renowned man of science, who by original study and research had contributed to the sum of human knowledge, in ways that tended most surely to promote the welfare of mankind. His conceded position as one of the first of modern physiologists was neither the result of accident nor the capricious reward of fortune, but was won as such honors can only be won, by a long and earnest life, devoted unremittingly to an exalted study, to which his natural tastes and faculties were singularly adapted.

"His professional bretheren alone can pay proper tribute to his scientific fame; but, as sharers in the benefits of his labors, we may all recognize and rejoice in their value.

"Dr. Dalton's public record was a stainless and an honorable one. As a surgeon in the National service, accompanying the 7th Regiment to Washington in 1861, and afterward until his resignation in 1864, rendering many highly meritorious professional services, he gave good earnest of patriotism and loyalty, which were always conspicuous features of his character. His practical experience with the Federal soldiers in actual

service—his knowledge by observation of their trials and sufferings—made him for life their faithful and sympathetic friend and champion; and as he loved from boyhood the cause which they served with life and limb, he followed to the end, with undeviating and unquestionable fidelity, the fortunes of the great party which sustained their efforts and carried out into practical legislation the results of their triumphs and sacrifices. He was a Republican always, because he could not help it, and had no sympathy with that modern fallacy of reform, that in times of doubt and danger the good men of a party must all leave it in order to make it better.

"Dr. Dalton's voluntary and unpaid services to the community in which he lived were of great and recognized value. Being graduated at Harvard and her famous medical school more than forty years ago, and having had the benefit of personal association with the best minds in the great profession which he adopted, and the profit of their instruction, he returned it in full measure, not only by advancing the boundaries of medical knowledge, but by hard and diligent service (rendered painful, even, by his personal infirmities) as a practical instructor to younger generations of medical men, by his learned works on physiology and his frequent and valuable contributions to medical literature. And in the last six years of his life, as the president of the College of Physicians and Surgeons, in the city of New York, in the supervision of its large and responsible affairs, in advancing and maintaining its high standard of education, and in carrying into practical and economical operation the enlarged means of usefulness and beneficence which private munificence have recently placed in its hands, he did much for the welfare of New York and the country.

"As a faithful friend, a charming companion, an honorable fellow-citizen, his memory will be ever dear to us. He bore with manly and uncomplaining fortitude sufferings which cut him off from many of our common associations and enjoyments, but his manly character and gentle temper command the love of those who knew him and the respect and admiration of all who came in contact with him."

"The Trustees of the College of Physicians and Surgeons desire to express their deep sense of the loss sustained by the College in the death of its President, Dr. John Call Dalton. During the thirty-four years of his connection with the College, first as Professor of Physiology and afterward as President, Dr. Dalton took a warm interest in all that concerned the welfare of the institution. The College was, in a special and peculiar sense, his real home. A large portion of his daily life was spent within its walls, and here was accomplished most of the work which rightly placed him in the front rank of American physiologists. Although a man of broad sympathies which carried him into other departments

of science, and into questions of public affairs, his life was centered here, and nothing lay so near his heart as the College of Physicians and Surgeons; its best interests, and its advancement to a higher plane of professional education. As a teacher, Dr. Dalton possessed qualifications of the highest order. He was always master of his subject; while by a seeming paradox, his subject mastered him. There was, for this reason, a certain contagiousness in his absorbing interest in his theme. Even the dullest facts, under his treatment of them, acquired a new freshness, either by some original illustration, some presentation from an unusual standpoint, or by a quaintness of expression that gave them an air of novelty. But nothing displayed so well his rare genius in imparting knowledge as the skill with which he simplified the most difficult subject by the orderly arrangement of its principles, and the transparent clearness of his language. To this directness and simplicity of speech, which was typical of the whole character of the man, was joined a peculiar charm of manner that fascinated everyone who came in contact with him. With children he was a great favorite. From him an explanation of the mechanism of some familiar object, or a story of natural history, told in his inimitable way, brought greater delight to the child at his knee than the most exciting fairy tale from anyone else. And so in the lecture-room, although Dr. Dalton had none of the more conspicuous but commonplace gifts of oratory, there was a certain personal magnetism about him—a rare, subtle quality of vital power, which at once placed him in sympathy with his audience and gave him absolute control over it. To the office of President Dr. Dalton brought a practical knowledge of men and affairs, a love of work, and thoroughness in it, that qualified him for the position to a degree that now seems almost providential. During his busy administration the College was removed to its present situation, its new buildings were erected, and its curriculum enlarged. Out of these changes grew a host of difficulties, many of them of an entirely novel character, which could be solved only by the exercise of the soundest judgment and the most laborious attention to details. Dr. Dalton approached this task in a conscientious spirit, determined that the trust imposed by the generous benefactors of the College should be carried out faithfully. With health already impaired by the disease of which he died, his labors were indefatigable. He seemed to feel that the time was short; but when the end came, he had the satisfaction of knowing that his work had not been in vain. The ambition of his later years was realized. He had lived to see the College he loved with a more than filial affection entering with bright prospects upon a new era of prosperity. Could he have known, also, with what a fulness of gratitude his unselfish labors were regarded by all of the alumni and officers of the College, who can doubt that even his well-merited scientific honors would have had less value to them in his dying hours than such a tribute to his personal character?"

Publications of John Call Dalton.

"Prize Essay on the Corpus Luteum of Menstruation and Pregnancy." 100 pp., 4 pl., 8°. Philadelphia, 1851.

"Some Account of the Proteus Anguinus." American Journal of Science and Arts. New Haven, 1853, xv. 8 pp., 1 pl., 8°.

"Introductory Address delivered at the College of Physicians and Surgeons, New York." New York, 1855. 29 pp., 8°. New York, 1855.

"On the Constitution and Physiology of Bile." American Journal Medical Science, Philadelphia, 1857, n. s. xxxiv. 20 pp., 8°. Philadelphia, 1857.

"Anatomy of the Placenta." American Medical Monthly, 1858, x. 14 pp., 8°.

"A Treatise of Human Physiology." xxiv, 17-698 pp., 8°. Philadelphia, 1860; 2d ed., Philadelphia, 1861; 3d ed., Philadelphia, 1864; 5th ed., Philadelphia, 1871; 6th ed., Philadelphia, 1875; 7th ed., Philadelphia, 1882.

"Vivisection: What it is, and What it has Accomplished." Read before New York Academy of Medicine. New York, 1857. 40 pp., 8°.

"A Treatise on Physiology and Hygiene; for Schools, Colleges and Families." New York, 1868. xvi, 17-399 pp.

Report of Commissioner New York State Agricultural Society for Investigation of Abortion in Cows. Albany, 1868. 59 pp., 8°.

"Trichina Spiralis: a lecture." Medical Record. New York, 1869-70. iv, 4 pp., 1 pl., roy. 8°.

"Sugar Formation in the Liver." Read before the New York Academy of Medicine. New York, 1871. 19 pp., 8°.

"Spontaneous Generation. The Substance of two lectures delivered in the College of Physicians and Surgeons, New York, January 12 and 13." New York Medical Journal, 1872, xv. 42 pp., 8°.

"Galen and Paracelsus." New York, 1873. New York Medical Jour., xvii, 29 pp., 8°.

"On the Spectrum of Bile." New York Medical Jour., 1874, xix. 22 pp., 8°. New York, 1874.

"A New Method of Determining the Position of Absorption Bands in the Spectrum of Colored Organic Fluids." Transactions New York Academy of Medicine, 1874. 10 pp., 8°. New York, 1874.

"The Origin and Propagation of Disease." An anniversary discourse delivered before the New York Academy of Medicine. New York, 1874. 30 pp., 8°.

"Experimentation on Animals, as a Means of Knowledge in Physiology, Pathology and Practical Medicine." iv, 5-71 pp., 120. New York, 1875.

"Experimental Production of Anæsthesia by Cerebral Compression." 10 pp., 8°. New York Medical Journal, 1876, xxiv. New York, 1876.

"Report of the Corpus Luteum." 50 pp., 4 pl., 8°. Boston, 1878. Trans. American Gynecological Society, Boston, 1878, iii.

"Topographical Anatomy of the Brain." 2 vols. Philadelphia, 1885, Fo.

"The Differences in the Form of the Adult Head." Medical News, Philadelphia, 1884, xliv, 245.

"Doctrines of the Circulation: A history of the physiological opinion and discovery in regard to the circulation of the blood." Philadelphia, 1884. 269 pp., 8°.

"Position of the Embryo in the Fowl's Egg." Medical Record, New York, 1881, xx, 589.

"Buffon and Bonnet in the Eighteenth Century." (Cartright Lectures.) Lecture II. Medical Record, New York, 1882, xxi, 113-121.

"Nervous Degenerations and the Theory of Sir Charles Bell." Medical Record, New York, 1882, xxi, 141-150.

Cartright Lectures: "On the Experimental Method in Medical Science." Medical News, Philadelphia, 1882, xl, 145-180. Same, G. P. Putnam's Sons, New York, 1882, 108 pp., 8°.

"History of the College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College." New York, 1888, 208 pp., 8°.

"Cerebral Anatomy." Medical Record, New York, 1879, xvi, 426-428.

"Brain Sections." Trans. Medical Society, New York, Syracuse, 1879, 122.

"Centres of Vision in the Cerebral Hemispheres." Medical Record, New York, 1881, xix, 337-339.

"Magendie as a Physiologist." International Review, New York, 1880, n. s. viii, 120-125.

"A Ready Method of making Brain Section for Post-mortem Examinations." Medical Record, New York, 1880, xviii, 134. Also, Boston Medical and Surgical Journal, 1880, ciii, 57.

"On the Form and Topographical Relations of the Corpus Striatum." Brain, London, 1880-81, iii, 145-159.

"An Introductory Address to the Medical Class of 1860-61 of the College of Physicians and Surgeons." 24 pp., 8°. New York, 1860. Another, October 16, 1855. 29 pp., 8°. New York, 1855.

"Motor Centres in the Cerebral Convolutions: Their Existence and Localization." Report on the above subject, December 21, 1874, by the committee appointed by the New York Society of Neurology and Electrology, consisting of J. C. Dalton, George M. Beard, J. W. S. Arnold, A Flint, Jr., J. J. Mason. New York Medical Journal, March, 1875. 18 pp., 8°. New York, 1875.

"Vivisection." 2 pp., roy. 8°. New York (n. d.).

CALVIN ELLIS.

Calvin Ellis was born in Boston, on August 15, 1826. He was a lineal descendant in the seventh generation of the men who founded the town of Dedham in 1634. All his ancestors were noted for intellect and high character, and he was their worthy descendant,—especially for his belief in work, for his love of letters, and for his firm religious convictions.

After a good preparatory course at schools in Boston, Ellis entered Harvard College, where he was graduated in the class of 1846. While at College he took a great interest in sports, and was a member of the first Harvard Boat Club. He used to say that during his college life he "played," and that he first awoke to the full meaning of life when he studied medicine. He was graduated from the Harvard Medical School in 1849, and the same year was appointed house-pupil at the Massachusetts General Hospital. There he showed the traits which endeared him to patients, physicians, students, and friends during his later life. Of a cheerful, sunny disposition, he was respectful, unassuming in manner, a scholar and a gentleman always.

After two years in the hospitals of France and Germany, where he devoted the greater part of his time to clinical medicine, morbid anatomy and pathology, he returned to his native city and became assistant to J. B. S. Jackson, Professor of Pathological Anatomy at the Harvard School. He was also made Admitting Physician and Pathologist to the Massachusetts General Hospital. Seldom was any one more fortunately placed. With the best of teachers to guide him and great opportunities for observation, it would be unlikely that he should not make progress.

We shall see that Ellis was alive to his opportunities. In 1865 he was elected Visiting Physician to the Hospital, which increased his chances of securing a better position in the

CALVIN ELLIS.

A. B. 1846; M. D. 1849.
Adjunct Professor Theory and Practice 1863-1865.
Professor Clinical Medicine 1867-1883.
Dean Medical School 1869-1883.

School. Accordingly on April 25, 1863, the Corporation appointed Ellis Adjunct Professor of the Theory and Practice of Physic. After serving George C. Shattuck for two years in this place, he was transferred to the Department of Clinical Medicine, and on October 20, 1865, was made Adjunct Professor to Henry I. Bowditch, whom he succeeded on September 28, 1867, as Professor of Clinical Medicine. Two years later he was chosen Dean of the Medical School, and held this office till June 25, 1883.*

Whether we consider Calvin Ellis as the cheerful, courteous, successful physician; the able, forceful, writer; the lucid, systematic, scientific teacher; the progressive reformer of medical thought and methods of teaching; or as one of Harvard's generous benefactors, we find that he did all things well. Ellis was unquestionably one of the most valuable teachers the Harvard Medical School has had. He showed that we must place the diagnosis of disease upon a scientific basis, he scouted mere authority. Nothing was to be regarded settled until proven. "Snap" diagnoses were beneath his notice, and so-called intuition in diagnosis was to him little less than charlatanism. He taught that every step in the diagnosis should be proven. In this he drilled his pupils in a fashion which to many other teachers seemed slow and overdone. *Diagnosis* by *elimination* was his method. How well he succeeded is shown by the fact that if there is one distinguishing

* The Corporation of Harvard College passed the following resolution October 8, 1883: "In view of the retirement of Dr. Calvin Ellis as Dean, the President and Fellows desire to record their high opinion of his services in that office during the past fourteen years. They believe that the safe conduct of the School through the grave changes of constitution and policy which this eventful period has witnessed is in large measure due to the disinterestedness, good judgement and firmness of Dr. Ellis, and that his professional and personal standing with the Medical Profession and the public has been of great assistance to the Faculty in their important undertakings."

mark about Harvard Medical graduates to-day it is their adherence to this method. The foundation for practice was well laid by Ellis and his followers. Nor was this reform his only work of reconstruction.

He was Dean of the Medical School in the reformation period, and the newly elected President found in him a leader ready and able to carry out reforms in that department of the University where custom, tradition, and personal interests seemed strong enough to defeat any attack. It will not seem invidious to claim a great share of the victory for this gentle, fearless, honest teacher. He lived to see success assured. Not so with his life work on Symptomatology. It must be one of our keenest regrets, as it is a loss to medicine, that this able man did not leave this last work of his in form for publication. But many of his writings survive. A full list includes some forty-two articles published between 1855 and the year of his death. His Boylston Prize Essay in 1860 on "Tubercle" was perhaps the best paper on that subject prior to Koch's discovery of the bacillus. Then his introductory lecture to the Medical Class in 1866 remains luminous for him who looks for good things in medicine.

Ellis became a Fellow of the American Academy of Arts and Sciences on November 9, 1859, and was a distinguished member of that learned body at the time of his death. During the Civil War he went twice to the front upon errands of mercy, and twice returned a victim to the infection from which he tried to rescue others.

His generous bequests to the School so faithfully executed by his sister have been as helpful in a material manner as was his teaching to the intellectual side of student life. His old friends and pupils quote him with pride and affection. Said his former teacher, Holmes:

"Of the large number of students with whom I have been in relation as teacher I do not remember one about whose future I felt more assured.

He had all the signs of promise; active intellegence, industerous habits, love of his work, a vigorous frame, a cheerful temperment, an agreeable presence stamped with every outward sign of a sincere and manly character. . . . He united many rare qualities. He had studied disease long and delligently. He never forgot that medical science is only the handle of the medical art. His assiduity, his patience, his self-devotion as a practitioner were unmeasured and unstinted, as I have known from personal observation. He forgot everything but his patient."

Another of his teachers, Henry I. Bowditch, said:

"He was my pupil in his days of medical study, my assistant at the Massachusetts General Hospital, and afterwards my successor there and also in the Professorship of Clinical Medicine in Harvard University; and finally he was always a most beloved friend. For many years past I have often sought his advice, and no one that I met gave wiser counsel than he did; for his words were uttered only after a most rigid examination of the matter in hand.

Ellis acquired his interest in morbid anatomy from J. B. S. Jackson, with whom he was a favorite assistant. This knowledge and training were important factors in his life as a teacher. He was the friend of students, and entered into their life and studies with the enthusiasm of a junior; he was appreciative of their endeavors, but the critic of their mistakes. The trustees of the Massachusetts General Hospital wanted him for Visiting Physician and were glad to get him. So too felt the Corporation of the University when they elected him Professor of Clinical Medicine. Finally, when his failing health made these duties impossible, the Corporation waited three years in the hope that his strength might return and his labor be renewed. He died on December 14, 1883.

Calvin Ellis' method of instruction has been mentioned. Here is a tribute; "Dr. Ellis while unravelling any case was less brilliant than some other more fluent professors, and he was called a little 'slow' and tedious, as some thought. But, upon our arrival at Vienna, by comparing our method of grappling with cases in the German Hospitals with the desultory

and imperfect examinations made by students of some noted schools in other large cities of our country, we soon found that we had been more *thoroughly drilled* than they. The result was that we understood more quickly and fully than they did all of the intricacies of a case." In his connection with the Medical School, Ellis stood for higher education. In the changes of 1870-71 he was known as a "conservative reformer." He was slow and deliberate in coming to a decision, but once he had decided that a certain course of action was the best, no opposition could turn him. It is to this spirit of determination that the younger members of the Medical Faculty owe the victory won under his leadership.

As a practitioner Ellis was very eminent. He was vigorous, kindly, firm, gentle. In the sick room all attention was for the patient. He was straight-forward, and neither misrepresented conditions nor encouraged false hope. His regard for the rights and feelings of his associates made him the confidant of many of his fellow practitioners. One grateful friend said "He was simplicity incarnate, a medical saint." Ellis was generous to poor folks and to deserving charities; he gave freely of his time and money, and helped many educational undertakings also. When the new Medical Library needed funds for a card catalogue, Ellis gave one thousand dollars, and at his death he left one hundred and fifty thousand dollars to the Medical School.*

---

* "All the residue and remainder of the said trust property my trustees, in the event aforesaid, shall convey in fee-simple, transfer and pay over to the said President and Fellows to hold the same as a permanent fund, and apply the net rents and income thereof and of all substituted property; in every year, after first deducting and accumulating in every year five per centum of such net income as an increase of the fund towards paying the salary of a professor of pathological anatomy. Provided, however, that if such professor would receive in any one year, if the whole of the said net income remaining after such deduction of five per centum were paid to him, a salary of more than $5000 for such year, arising from

President Eliot in his report for 1883-84 pays the following tribute to Ellis:

"Cautious, exact, conscientious, earnest and cheerful, he was one of the best teachers of medicine the University has ever had. His daily example, as a wise and high minded practitioner, and a kindly, honorable and disinterested man, was of great worth to the students, for they saw that these qualities were the foundation of his success as a physician, and of his wholesome influence in the Hospital, the School and the Medical profession. He was Dean of the Medical School from 1869 to 1883, and in this important office contributed with all his weight to the reform in medical education which the Faculty effected within that period. Of his strong faith in the beneficence of medical science he gave proof by leaving large bequests for the promotion of that science at the University."

At a meeting of the Medical Faculty of Harvard University, held February 2, 1884, the following was adopted:

"For nearly a quarter of a century Dr. Calvin Ellis has been connected with the Medical School of Harvard University. He had been recognized as a student, as a young man of good promise, endowed not only with superior abilities but with the sterling elements of character which enable those who know the student to predict his future success with no misgivings.

---

gifts, legacies and other permanent endowments, (including the income of this legacy) then, and in every such year, the amount paid him from the income of this legacy shall be reduced so that the total income from such sources shall be $5000 and no more. And if the income from gifts, legacies, and other permanent endowments, exclusive of the income of this legacy, shall amount in any year to $5000, then, and in every such year, the income from this legacy shall be witheld altogether from such professor. The amount so witheld, whether it be the whole or a part of the net income, after deducting five per centum, shall be applied to the salary of the professor of physiology, with the same provision and limitations as those herein declared touching the salary of the professor of pathological anatomy. And any amount in every such year still remaining unapplied shall next be applied to the salary of the professor of anatomy with the same provisions and limitations as are herein declared touching the salary of the two professors first named. And if the whole or any part of such income still remains unexpended in any year, the same shall be expended in such year for such purposes in the Medical Department of the said College as the said President and Fellows shall deem most useful."

"He began early his professional life, giving his especial attention to the subject of morbid anatomy, following in the steps which had marked the long and patient career of our lamented friend, the late Dr. J. B. S. Jackson. This branch of science involves great labor and self sacrifice, and repays them with an exact knowledge of the nature and course of disease not to be obtained by any easier method of study. His devotion to this arduous pursuit laid the foundation in science of the skill which he carried into the art of healing, and of his success as a teacher of pathology and clinical medicine.

"Dr. Ellis took an active and never flagging interest in all that related to the administration of the Medical School of the University. He had a special care for the microscopic department, which was largely developed under his influence, and for the use of which he made a gift in 1872, of five hundred dollars. From 1869 to 1883 he was dean of the Medical Faculty, and discharged all the duties of that office with the fidelity which he carried into whatever he undertook. It is now several years since he began to suffer from the disease which caused his death. Even after this disease had greatly impaired his active powers he would still attend the meetings of the Faculty and when at length he was missed from his usual place those who knew him felt that he was doomed, for no less than some imperative hindrance could keep him from being with them.

"His long period of suffering bravely borne has at last come to an end, and he has left us to mourne the loss of a precious life cut off in the midst of its usefulness. Of that diligent, faithful, honorable life this Faculty has reaped some of the best fruits. His memory will alway be gratefully cherished by those who have been associated with him in the work of medical education, and they leave on record for those who come after them this affectionate tribute to the virtues and talents of their able, upright, noble-hearted colleague and friend."

Writings of Calvin Ellis.

1855. "Evidences of Arrest of Tuberculosis Disease in the Lungs." Am. Journal of the Medical Sciences, Philadelphia.

1855. "Induration of the Brain in a Child." Am. Jour. Med. Sc., Philadelphia.

1855. "Glandular Proliferous Cyst. Disease of the Liver. Autopsy." Am. Jour. Med. Sc., Philadelphia.

1856. "Inflammation and Abscesses of the Lung, caused by Closure of the Primary Bronchus." Boston Med. and Surg. Jour.

1856. "Case of Suicide by Antimony." Boston Med. and Surg. Jour.

1857. "Remarkable Case of Extra-uterine Fœtation, coexisting with Uterine Pregnancy." Boston Med. and Surg. Jour.

1858. "Case of Purpura simulating Rheumatism and Erysipelas." Boston M. & S. Jour.

1860. "Leucocythaemia." Boston Med. and Surg. Jour.

1860. "Two Cases of Malformation." Boston Med. and Surg. Jour.

1860. "On Tubercle." (Boylston Prize Essay.) Am. Jour. Med. Sc., Philadelphia.

And the following, printed in the Boston Medical and Surgical Journal:

1861. "Autopsy of a Case of Cerebral Disease without Cerebral Lesion."

1861. "Softening of the Heart as a Cause of Sudden Death."

1861. "Obstinate Vomiting terminating in Death. Disease of Kidneys."

1861. "Two Cases of Leucocythaemia, in which Crystals formed in the Blood after its Removal from the Body."

1863. "Case of Addison's Disease."

1864. "A Malformed Heart."

1864. Reports of Cases. Cerebro-spinal Meningitis, Typhoid Pneumonia, Disease of Heart, and Aorta; Intestinal Hemorrhage. 1865. The Action of Causes of Depression in the Production of Structural Change; the Pathological Anatomy of Pneumonia.

1865. "Congenital Tumors, containing Foetal Structures."

1865. "Spontaneous Laceration of the Aorta. Two Cases."

1865. "The Relations of Health and Disease." An Introductory Address at the Harvard Medical School.

1866. "Spontaneous Evolution in Labor. (Curious Powers of Nature.)"

1867. "Letter Explanatory of a Criticism on his 'Relations of Health and Disease.'"

1869. "Letter from Berlin. Account of the Medical School there."

1870. "The Tendency of so-called Local Diseases to Generalization."

1871. "Vomiting as the Sole Prominent Symptom of Disease of the Kidneys."

1871. "Autopsy of a Double Monster (Ischiopagus Tripus)."

1874. "On a Case of Echinococcus Cyst." (Interesting as foreshadowing his "Symptomatology.")

1874. "Ovarian Cyst."

1875. "Capillary Bronchitis of Adults." (In Am. Clin. Lect. Series.)

1876. "General Softening of the Brain, seldom seen as a Pathological Condition; never as a Clinical Disease."

1876. "The Curved Line of Pleuritic Effusion."

1877. "Constant Irrigation in a case of Chronic Cystitis."

1877. "The Point of Origin of the so-called 'Bronchial Respiration.'"

1877. "Ulcerative Endocarditis: Embolism of the Arteries of the Left Leg."

1878. "Osteomalacia in a Man."

1879. "Chest Expansion in Pleurisy."
1879. "Dilated Bronchi."
1879. "Probable Acute Nephritis."
1879. "Effusion of Blood into the Left Hemisphere and Lateral Ventricle."
1880. "The Significance of Albuminuria as a Symptom."
1884. "Symptomatology." (An unfinished manuscript.)

RICHARD MANNING HODGES.

Richard M. Hodges was born at Bridgewater, Massachusetts, November 6, 1827. He was graduated from Harvard College in 1847, and received his M. D. at the Medical School in 1850. After a course in midwifery at Dublin and a course in anatomy and surgery at Paris he returned to Boston and began the practice of medicine. Among Hodges' contemporaries in Paris were Calvin Ellis, C. D. Homans, J. Nelson Borland and B. S. Shaw.

Hodges was appointed Demonstrator in Anatomy at the Harvard School on September 24, 1853, and served for eight years. O. W. Holmes was the Professor of Anatomy and Physiology at the School in this period. The preparation of material for the class was a matter of great personal pride to Holmes. Every little detail was arranged with special care, and nothing was left undone to present the subject-matter properly and effectively. Hodges was fitted to meet the wishes of his chief. He had an exceptional knowledge of anatomy, and competent judges say that his dissections "were marvels of beauty and skill." In the museum at the Medical School are many handsome specimens of his handiwork, all finely injected and colored by processes then quite new. About this time Hodges was fortunate in winning the friendship of H. J. Bigelow, then well established in his career. Bigelow's extensive practice and the great demands made upon his time by other labors gave Hodges many opportunities to find prac-

tice through the recommendations of his friend. This solid endorsement had its effect, and he rose rapidly in the profession. With a natural, pleasing manner and a winning personality which we know Hodges possessed, it does not seem like an exaggeration to read that "as a fashionable and popular physician he has rarely had an equal in Boston; and his decided, sensible advice and warm sympathy made him a great favorite."

Bigelow found in Hodges an apt pupil, with an earnestness, decision and self-confidence which appealed strongly to his own nature. Upon the resignation of S. D. Townsend in 1863, Hodges was appointed Visiting Surgeon to the Massachusetts General Hospital. There he was associated with Cabot, Bigelow, Clark, Gay, and J. Mason Warren. He was always the friend as well as the teacher of house-officers at the Hospital, and many surgeons who in after years became distinguished owe much to the patient, careful oversight of their old chief, Hodges. As an operator he was one of the best as well as one of the neatest. He was well grounded in anatomy, schooled under one of America's greatest surgeons, and possessed of broad, scientific views. His writings upon excision of joints, upon spiroidal fractures and upon other surgical conditions, became authoritative. He was the first to point out the frequency of a sinus in the sacro-coccygeal region, to which he gave the name "Pilo-nidal sinus" from its hairy contents and nest-like shape.

Hodges was elected Adjunct Professor of Surgery on January 27, 1866, and proved himself of great assistance to Bigelow, who was then perfecting his well known demonstration of the Y ligament and its bearing on hip dislocations. Teaching did not appeal especially to Hodges, whose nervous temperament made each course of lectures more laborious, so he resigned on July 10th, 1872. He continued his services, however, at the Hospital until 1885, when he resigned. The loss

to the hospital was expressed upon a later occasion by the Trustees in the following terms:

"Wise in council, energetic and efficient in action, clearheaded, skilful, manly and sympathetic, Dr. Hodges combined to an unusual degree the qualities essential to the model surgeon. Through them he rapidly attained a leading position among the surgeons of New England, second only to that of his esteemed and illustrious colleague with whose name his own was usually coupled. A successful and experienced teacher, the importance of his example and of his services to the Hospital in the training of his juniors will ever be gratefully remembered. Loyal and generous to them, both in and out of season his willing strength was often called upon and never in vain."

The reason for his retirement from the staff of the Hospital has been explained variously. He was no doubt influenced by his increasing deafness, as well as by the mental labor necessary for him at his age to keep up with the rapid changes in surgical methods. At that time abdominal surgery was coming to overshadow all other branches of the art, and improvements in technique followed thick and fast. Already well-to-do, there was no imperative reason why he should continue duties of an arduous nature. Then too his friend and companion Bigelow was leaving the hospital.

Hodges' association with Henry J. Bigelow makes his account of the ether controversy almost official. It is entitled, "The Introduction of Surgical Anaesthesia," 1891.

In the Massachusetts Medical Society he was Anniversary Chairman in 1872 and delivered the annual discourse in 1886, on "Undercurrents of Modern Medicine." He also read "Modern Surgery" before this Society, and he wrote a life of Bigelow.

The man had sterling qualities; he was active, steady, and ambitious, with an opinion decisive, almost dogmatic; he was blunt to brusqueness at times, yet always sincere and honest. Of habit he was punctilious, and insisted upon the same quality in others, who came into professional or social relations

with him. Although modest to a degree he had a decided and self-reliant manner which never failed him when needed. He was a member of the Board of Overseers of Harvard College from 1878 until 1890, and was a member of the American Academy of Arts and Sciences, and of the Boston Society for Medical Improvement from 1854. He retired from active practice in 1891, and died in Boston on February 9, 1896.

HARVARD MEDICAL MEN IN THE CIVIL WAR AND IN THE SPANISH WAR.

CHAPTER XXXII.

HARVARD MEDICAL MEN IN THE CIVIL WAR AND IN THE SPANISH WAR.

As the Harvard medical student returns from his daily lectures at the School, his eye may light upon an inscription above the main staircase, high up, and he will read

In the Memory
of the
Graduates and Members of the
Medical School of Harvard University
Who fell in the Army and Navy
of the United States during
the war of the rebellion.

Erected by the Class of 1869-70.
John Lawrence Fox
Charles Henry Wheelwright
Francis Miller McLellan
Samuel Lee Bigelow
Edward Hutchinson Robbins Revere
William Henry Heath
Samuel Foster Haven
Robert Ware
Lucius Manlius Sargent
Ira Willson Bragg
John Edward Hill
Dixi Crosby Hoyt

Henry Sylvanus Plympton
Edward Bromfield Mason
John Fletcher Stevenson
William Borrowe Gibson
Neil K. Gunn
James Wightman
Eugene Patterson Robbins
Henry Livingston Dearing
Nathaniel Bowditch
Oliver Dean Root.

At the left of the entrance to the Dean's office is a bronze tablet

To the Memory of
Zabdiel Boylston Adams
1829-1902
Surgeon 32nd. Capt. 56th Mass. Inf.
A faithful officer in the war
which preserved the Union and destroyed Slavery.
His companions in arms of the
Commandery of the State of Mass.
of the
Military Order of the Loyal Legion
of the United States
Have here placed this tablet
Lex Regit Arma Tuentur.

The service to their country and fellow men, the hardships and heroism, the honor to their Alma Mater, the lesson of loyalty and devotion taught the generations by Harvard's sons in the Civil War, have been told and retold. Our pride in their achievements is as great as in the record of those ancient Colonial Harvard Men. I shall tell here of those Harvard

men only who, as medical graduates or undergraduates, entered their country's service. I shall not attempt to give a complete record of each man's service. This has been done already exhaustively, laboriously and sympathetically by others.* A full record compiled from their books as well as from other sources will be found in the statistical part of this work. Let us follow some of the movements of the Union forces on land and sea, noting the part taken by our Alumni.

A word as to the status of the Army Medical Department at that time. The conditions in the army service during the Revolution have been described in these pages. It will be remembered how Washington called the attention of the Congress to the unsettled state of affairs: "There is no principal director nor any subordination among the surgeons; disputes and contentions have arisen, and must continue until it is reduced to some system." A reorganization of the Medical Department resulted. Church's treason, Morgan's persecution for the shortcomings of the Congress, and Shippen's reorganization of the service, are all a matter of history. The summary of it is, that the war produced among us a number of excellent military surgeons, creditable alike to their country and to their profession.

The war of 1812 proved the necessity of a recognized head in the Medical Department, and in 1818 (May 14th, Act) Joseph Lovell was appointed the first Surgeon General. The second Surgeon General, Thomas Lawson, was successful in giving a dignity and rank to the position of medical officers such as they had not previously. It was thought a great step in advance when in 1849, Latin, physics, practical anatomy

* Francis H. Brown A. M.; M. D. "Harvard University in the War of 1861-1865."

Henry I. Bowditch, M. D. in the "Roll of Honor of the graduates and students of the Medical School," which work is in manuscript form in the library at Cambridge.

by means of dissections, and actual clinical experience were added to the requirements in the admission examination.

At the outbreak of the Civil War the army numbered 16,400, with a medical staff of 115, or .7 per cent of the whole number of officers and enlisted men. In spite of this high percentage of surgeons the actual number of those holding positions of the higher grade was small. This had its evil consequences and explains much of the suffering among the wounded and the apparent inhuman negligence of those in command. Medical officers had the right to criticise; they might petition Congress; they might suggest plans and urge expediency for the relief of the sick and wounded, but *they could not command* even the drivers of improvised ambulances. The following letter will give some idea of the state of the department in the early years of the War:*

"Surgeon General's Office.
"Sept. 7, 1862.

"Honorable Edwin M. Stanton, Secretary of War.

"Sir: I have the honor to ask your attention to the frightful state of disorder existing in the arrangement for removing the wounded from the field of battle. The scarcity of ambulances, the want of organization, the drunkenness and incompetency of the drivers, the total absence of ambulance attendants are now working their legitimate results, results which I feel I have no right to keep from the knowledge of the department. The whole system should be under the charge of the Medical Department. An ambulance corps should be organized and set in instant operation. I have already laid before you a plan for such an organization, which I think covers the whole ground, but which I am sorry to find does not meet the approval of the general-in-chief. I am not wedded to it. I only ask that *some* system may be adopted by which the removal of the sick from the field of battle may be speedily accomplished and the suffering to which they are now subjected be in future as far as possible avoided.

"Up to this date six hundred wounded still remain on the battlefield in consequence of an insufficiency of ambulances and the want of a proper

* Taken with other material on this question from a series of articles on the "Army Medical Department," Journal American Medical Association, vols XLII, et seq.

system for regulating their removal in the Army of Virginia. Many have died of starvation, many more will die in consequences of exhaustion, and all have endured torments which might have been avoided.

"I ask, Sir, that you will give me your aid in this matter, that you will interpose to prevent a recurrence of such consequences as have followed the recent battle, consequences which will inevitably ensue on the next important engagement if nothing is done to obviate them. I am, Sir, very respectfully, "Your obedient servant,

"WILLIAM A. HAMMOND, Surgeon General."

Hammond's description of the pitiable state of the six hundred or more wounded soldiers on the battlefield of the second Bull Run represents one extreme, while the conditions then existing for the care of the sick and wounded in the Army of the Potomac under McClellan may be accepted as the other extreme. The contrast may appear infinitesimal, but there was a step in advance. The Army of the Potomac was the best appointed of all our armies, North or South. It had for its Medical Director Jonathan Letherman, who at the age of thirty-eight had just received his promotion to major when McClellan's retreat after the seven days' fight gave him opportunity to put into practice that scheme for an Ambulance Corps which has ever since been associated honorably with his name. Letherman's plan was simple but effective. He secured volunteer officers and men, who with such ambulances as could be procured were placed under the charge of the Medical Directors of the several corps. A distinctive uniform and some simple drill were prescribed. This plan had its obvious defects, for we know what was the relationship of the Medical Department to the fighting department.

The line officers believed that their troops were there to fight, consequently when a call was made for men for detached service, such as ambulance duty, those men thought to be least fitted for fighting duty were invariably detailed. The evil consequences of this system need not be further traced. It was the sort of system to be expected of a country unac-

quainted with the science of war. Let us be thankful that the Army of the Potomac had some sort of an Ambulance Corps in its seventeen battles, its two sieges, its many skirmishes and minor engagements, during that eventful year of 1862. The devotion of this untrained volunteer band deserves our profound gratitude. The army surgeon in battle stands alone. No well laid plans are given him; no martial music leads him; no cheers greet his return; without a Grant, a Lee, a Sherman, or a Sheridan as the ideal to which he may arrive, he must stand always ready to rush into the fighting, and carry off the wounded from the field. Hence we not infrequently find him Unionist still, "fighting his battle" under a Lee, a Johnston, or a "Stonewall" Jackson. The very qualities calculated to lead ordinary men on to deeds of heroism in the heat of battle are expected in the case of a surgeon to give a quickness and clearness to the mental faculties, to steady the hand and to soften the voice of him whose right to higher grade is refused "unless it can be shown that the skill and efficiency of surgeons are increased by an increase of rank and pay." Few chapters in American history are finer. To the reader, curious in these matters, I recommend the huge collection of data in the "Medical and Surgical History of the Rebellion." I have abstracted for this chapter such facts in part as apply to our own alumni. But a further word regarding the development of the army medical department up to its present standard:—

That ambulance system inaugurated in the army of the Potomac proved its value at Antietam, Fredericksburg and Gettysburg. Our experience proved the value of the two-wheeled ambulance for one horse, and the four-wheeled ambulance for two horses, in spite of the opinions of the English, French, and Sardinian surgeons at Sebastopol that such vehicles were impracticable for battlefields. Letherman's plan was more or less the standard during the Civil War, in battles

in which any attempt at ambulance work was undertaken. In America neither the loss of over 575,000 men* nor the care of 1,057,423 sick, nor the expenditure of $47,000,000 in the Medical Department seem to have impressed the authorities, and we find the *detail* system prevailing in the Army up to 1887. From that date a somewhat modern plan has been carried out. An organization consisting of men specially trained for such work, under the charge of non-commissioned officers, was instituted in the army. In 1892 the Army Medical School was established in Washington, a school which has been very helpful in the advancement of medical science. Then came the Spanish War of 1898, at which time the Medical Department consisted of 177 commissioned officers and 750 enlisted men, in a standing army of 25,000. The 250,000 volunteers brought their surgeons with them,—three to each regiment, and three hospital stewards. The Hospital Corps had to be made up by transfering men from the volunteer regiments to the Regular Hospital Corps, no volunteer hospital corps having been authorized.

The lessons of the military and sanitary inadequacy of this system resulted in little improvement, as can be seen from a study of the Act of February 2, 1901, on the reorganization of the army. The recommendations of the committee appointed by President McKinley to investigate the conduct of the War Department are instructive, and should result in further improvements. It is interesting to note the opinion of the late Colonel Dallas Bache, Assistant Surgeon General, on the value of the field hospital, a factor of great importance in the army medical department. He says:

"The division hospital, which is the logical unit for medical field service, and will survive the new criticism, has created for itself a picturesque reputation that is destined to make trouble. It has frames, floors, wire mattresses, much bedding, and many conveniences. The hospital of ex-

* Union loss 279,376; Confederate loss 300,000.

perience is a lean, though active thing, by the side of this opulent hotel. It is for nimble service, and often stripped to the simplest necessities, waterproofs, blankets, and a chance concession for empty bed sacks. It must often ignore tables of supply; it cannot afford a superfluous ounce of flesh or anything else. Its transportation must go for its canvas, stores, clothing, utensils, and tools. Its intent is to cover barely, to receive the sick and wounded, but not to harbor them long; to be ready at an hour's notice to move. Furniture would be as impossible as melodeons or lawn mowers. Such a hospital must be manned. Its personnel are soldiers first, and nurses afterward; for it is for hard service, and meant for fatigue, privation, weathers and confusion. It may be idle sometimes, and acquire Spartan luxuries, but nothing but some overwhelming misery of the sick should intrude an unaccustomed and alien attendance."

On the outbreak of the Civil War, William Johnson Dale (M. D. '40) was summoned by Governor John A. Andrew of Massachusetts at 11 A. M., April 16th, 1861, to aid in despatching troops to Washington. Dale was appointed Surgeon-General of the Massachusetts Volunteer Militia, with the rank of colonel, June 14, 1861, and in December of the same years he was made Assistant Surgeon, U. S. A., which rank he held until the close of the war. Dale had general supervision of all matters connected with the Medical Staff, and the care of the sick and wounded sent home. He also had the appointment of agents for the care of Massachusetts soldiers at various stations, was charged with furnishing volunteer surgeons; and with the pay, discharges, furloughs, pensions, etc., of Massachusetts soldiers.

At the first blood-shed on the 19th of April, 1861, George F. Shattuck was present as lieutenant in the 6th Massachusetts Volunteer Militia. He returned to Harvard for his M. D. degree in 1862. It is worth noting that the Faculty of the Medical School voted (Nov., 1861) "that the time a medical student is engaged in the army be allowed to him as equivalent to the same period passed with an instructor, provided that he can procure a certificate from the surgeon of the regiment to which he is attached, that he has constantly

been occupied in the discharge of his professional duties." John P. Ordway (M. D. '61) claims to have performed at Annapolis the first surgical operation of the war, 23rd April, 1861.* In the fighting prior to the first Bull Run, we find Augustus P. Chamberlain (M. D., '55), at Big Bethel, Virginia, and John E. Hill (M. D., '60), at Centreville, Virginia, where he received wounds which caused his death on September 11th, 1862.

John F. Head (M. D. '43) was Chief Medical Officer at West Point on the outbreak of war, and after serving for two years in other departments was returned to West Point in 1864. He was brevet lieutenant-colonel U. S. A. at the close of the war.

At the first battle of Bull Run many Harvard graduates were participants. Zabdiel Boylston Adams (M. D., '53), who afterward served through the Peninsula Campaign, was at the siege of Yorktown, in the battles of the Wilderness, Fair Oaks, Seven Days' Fight; and with Pope, Burnside, Hooker, and Mead in all their greater battles. Reënlisting as first lieutenant in November, '63, he was in the Wilderness with Grant, and after being wounded he experienced the horrors of Gordonsville, Lynchburg and Libby prisons. Again reënlisting in '65, he commanded his regiment at the battle of Petersburg, where he received his fourth wound. The Legion of Honor made no mistake in dedicating a tablet to this physician-soldier's memory.

Francis LeBaron Monroe (M. D., '61) followed the Army of the Potomac in all its engagements until July, 1864.

William A. Hatch (M. D., '67), enlisting as a private, won promotion to lieutenant, captain and major, in the Peninsula and Virginia campaigns, and at Fredericksburg.

* On the 15th of April, 1861, in saluting the flag at Fort Sumter before evacuation, one man was killed, and three men wounded by the premature explosion of a gun. Brown, p. 266.

Benjamin E. Donham and Samuel L. Morse, both graduates of the Medical School, class of '68, served as privates at Bull Run, Morse being among the wounded.

Israel T. Hunt (M. D., '70) served as Hospital Steward after Bull Run, with Sherman in his South Carolina expedition.

Elisha Hopkins (M. D., '54), reëntered the army in 1862 as Assistant Surgeon, and served at Baton Rouge, Port Hudson, Winchester, Fisher's Hill and Cedar Creek.

Silas A. Holman (M. D., '55) enlisted 15th June, '61, and was appointed Surgeon to the 7th Massachusetts Volunteers. His list of battles includes a continuous service from the Peninsula campaign to Cold Harbor; and he was brevetted Colonel in March, '65.

Charles M. Carleton (M. D., '61) was Surgeon in the 18th Connecticut Volunteers, and Acting Brigade Surgeon at the defense of Baltimore.

Henry C. Dean (M. D., '61) served as Surgeon with New York regiments from 1861 to June 6th, 1865, and with these regiments saw war in all its horrors.

Edward P. Morong (M. D., '54), entered as Surgeon to the 2nd Maryland Volunteers, June, 1861, and resigned as brevet lieutenant-colonel in March, 1866.

George H. Oliver, of the same class at the Medical School, volunteered as Assistant Surgeon in the 118th New York Regiment, and resigned January 1st, 1865.

Joseph D. Mitchell (M. D., '50) was in the South Carolina campaign of 1862, and served until 1868.

Isaac G. Cole (M. D., '65) was a private and Hospital Steward from 1861 to 1865, and was well "trained" for his degree.

Samuel A. Green (M. D., '54) the first medical officer from Massachusetts for the three years' enlistment, was Assistant Surgeon at Bull Run; he was in the battle of Roanoke Island,

after which he was instrumental in having laid out at Roanoke a cemetery consecrated to the Union dead. He served in the North and South Carolina expeditions, was at the siege of Fort Wagner, and later instituted smallpox hospitals at St. Augustine and Jacksonville. He shared the humiliating fate of Butler's command at Bermuda Hundred, and ended his military career at Richmond.

Augustus C. Hamlin (M. D., '55) went from Bull Run and Yorktown to the Army of Virginia, where he was Surgeon-in-Chief of the Flying Hospital in the battles of Cedar Mountain, Sulphur Springs, and second Bull Run. In the following year he took part in the assault on Fort Wagner.

Jansen T. Paine (M. D., '62) volunteered in the 6th Massachusetts Volunteer Militia, April 15, '61, as Assistant Surgeon. He was at Bull Run. Reëntering the army after the expiration of his three months, he served with the 31st Massachusetts at Baton Rouge, Port Hudson and in the Red River Campaign. He finished his service as Surgeon in the 2nd Louisiana Volunteers.

Edward R. Cogswell (M. D., '67) was a private in the 44th Massachusetts Volunteers, and won a sergeancy at Kinston and Whitehall.

Edward N. Whittier (M. D., '69) served in all the greater battles of Virginia from the first Bull Run to Petersburg inclusive. He also took part in the battles of Winchester, where he was wounded, Fisher's Hill and Cedar Creek.

Henry Bryant (M. D., '43) was in the battles of Winchester and Bull Run. Bowditch says: "Dr. Bryant was one of the ablest of the hospital surgeons that left Massachusetts. His Hospital at Washington, D. C., was a model of neatness, and unequaled for its thorough discipline. He gained great reputation. He died at the West Indies while engaged in natural history researches about a year after the war ended."

Samuel Kneeland, of the same class at the Medical School,

was in the battles of Newbern, Kinston, and others of the North Carolina expedition of '62. Later in the war he had charge of hospitals at New Orleans and at Mobile. He left the service brevet lieutenant-colonel U. S. Volunteers.

Joseph W. Clift (M. D., '62) joined the 6th Corps in Virginia immediately after graduation, and was present at most of the engagements of that Corps up to November, '64.

Edward Russell (M. D., '62) joined the 26th Massachusetts as Assistant Surgeon in July, '62, taking part in all the engagements until mustered out November, 1865. His last year of service was with the 4th Massachusetts Cavalry.

William Nichols (M. D., '62) served as Assistant Surgeon and Surgeon from April, '62, to September, '65. His regiments were the 2nd Massachusetts Volunteers and the 3rd Massachusetts Heavy Artillery.

Another future graduate with the 2nd Massachusetts Volunteers was Curtis E. Munn (M. D., '66). He was with the 1st Massachusetts Cavalry and the 27th Massachusetts Infantry prior to joining the Second.

Andrew J. Thompson (M. D., '61) was Medical Director on General Davidson's staff, and was attached to the 8th New Hampshire Volunteers.

John S. Emerson (M. D., '55) was Surgeon in New Hampshire regiments from 1862 to 1865.

Joshua B. Treadwell (M. D., '62) entered the army as Assistant Surgeon in the 45th Massachusetts in October of the year of his graduation from the Medical School, and was with his regiment in those early battles. He served four months with the 5th Massachusetts in '64, and with the 62nd Massachusetts and 54th Massachusetts Volunteers during '65.

William Thorndike (M. D., '57) served with two regiments that saw hard service, the 34th Massachusetts Volunteers and the 39th Massachusetts. His service runs from August, '62, to June, '65.

George A. Stuart (M. D., '66) was a private and later a Hospital Steward, and saw much active service in the 9th and 32nd Massachusetts Volunteers in 1861-62, and later in the 39th Massachusetts Volunteers in '64 and '65.

Samuel P. Fowler (M. D., '74) was a sergeant in the 8th Massachusetts in the nine months enlistment of '62.

Frederick H. Thompson (M. D., '70) was with the 10th Massachusetts Volunteers.

Thomas J. W. Kennedy (M. D., '46) was Hospital Steward with the 11th Massachusetts Volunteers.

McDowell's defeat at the first Bull Run roused the national government to a realization of the seriousness of the situation, as well as to a recognition of their military shortcomings. In response to Lincoln's call for 500,000 men many physicians entered the service.

In the eighteen months required to open the Mississippi river many Harvard medical graduates tasted the bitterness of war for the first time.

Hall Curtis (M. D., '57) was in various North Carolina and Virginia skirmishes of 1862.

Here, too, James A. Emmerton (M. D., '58) was initiated, and after an extended hospital experience, saw active service at Appomattox and on the James River, and at Cold Harbor.

Ethan A. P. Brewster, who received his M. D. at Harvard in 1865, rose from second lieutenant to major during this campaign.

Others engaged in these battles were Reuben Willis (M. D., '67), William Ingalls (M. D., 1836), Frank Wells (M. D., '68), Dixi Crosby Hoyt (M. D., '60), Silas E. Stone (M. D., '60), Theodore W. Fisher (M. D., '61) and Isaac F. Galloupe (M. D., '49). The last named was present at thirty-one actions in North Carolina.

Edward H. R. Revere (M. D., '49) was captured by the Confederates at the battle of Ball's Bluff, and later served at

the battles of West Point, Fair Oaks, and in Pope's Campaign in Virginia. He was killed at Sharpsburg, 17th September, 1862.

Robert F. Stratton (M. D., '57) served at Corinth and in Sherman's march across Georgia. He was in charge of the Vicksburg Hospitals in '64.

On the roster at the battle of Shiloh, April 6-7th, '62, we find the name of Webster Lindsly (M. D., '57), who later was an active participant in the Kentucky, Tennessee, Alabama and Mississippi campaigns.

John Call Dalton (M. D., '47) was General Viele's Chief Brigade Surgeon, and was present at the reduction of Fort Pulaski, Georgia.

George M. Staples (M. D., '55) was assigned to Fort Henry after its capture, and was present at Fort Donelson where he had charge of one of the field hospitals; at Shiloh and Corinth he was Surgeon-in-Chief of General Wallace's Division; he was with Sherman in his raid on Vicksburg, and served in all the battles of the Red River campaign.

James Waldock (M. D., '52) was captured during the Louisiana campaign of '63.

Sumner A. Patten (M. D., '48) was Assistant Surgeon of the First Maine Cavalry at the battles of Cedar Mountain and the second Bull Run.

Enoch Adams (M. D., '51) was Surgeon with the 14th Maine Volunteers at New Orleans, and in the Red River campaign.

Others in the Maine quota were Henry A. Reynolds (M. D., '64) in the First Heavy Artillery; John S. Cushing (M. D., '58) in the 23rd Volunteers.

In the New Hampshire Regiments we find Daniel Farrah (M. D., '62) with the 3rd Regiment; Frank T. Moffitt (M. D., '70) and Marshall Perkins (M. D., '50) with the 14th Volunteers.

In McClellan's advance on Richmond in '62 we find many Harvard men.

Charles M. Chandler (M. D., '54) was with the 6th Army Corps at Williamsburg, Chickahominy, Savage's Station, Seven Day's Battle, and second Bull Run. Again we find him with McClellan in that terrible carnage at Antietam; with Burnside at Fredericksburg; and with Hancock at Gettysburg.

Joseph Underwood (M. D., '47) volunteered as a private, and was sent to the Army of the Potomac. In the Seven Days' Battle he was taken prisoner.

Another physician acting as a private in the Seven Days' Fight was Rio Delos Barber (M. D., '66). He had previously been in action at Yorktown, Kinston, N. C., Whitehall and Goldsboro, as well as at the capture of Forts Wagner and Gregg.

Augustus P. Clarke (M. D., '62) was taken prisoner at Savage's Station. He was present in some seventy engagements, and left the service in '65 as brevet lieutenant-colonel U. S. Volunteers. He won the following recommendation:

"Headquarters 1st Cav. Div.,
"Sheridan's Cav. July 1, 1865.

"Hon. E. N. Stanton,
"Secretary of War.

"Sir: * * * * Surg. A. P. Clarke served on my Staff as Surgeon-in-Chief of Brigade for two years, and in the closing campaign as Surgeon-in-Chief of Division.

"In the hour of battle he was always at the front, attending to the care and removal of the wounded and freely exposed himself when duty required. He was known as one of the most efficient officers of the Medical Staff of the Army.

"(Signed) THOMAS C. DEVIN,
"Brevet Major General Vols."

Nathan P. Rice (M. D., '53) went out as Surgeon to the 18th New York Volunteers, and was at the battles of West Point, Gaines' Mills, Malvern Hill, South Mountain and

Fredericksburg. From 1863 to 1865 he served in various hospitals in Virginia, North Carolina and Maryland. He also was promoted brevet lieutenant-colonel before the close of his service.

John Homans (M. D., '62), so well known to all Harvard men since the Civil War days, was at Malvern Hill in July, '62. He entered the navy, which at that time was helping McClellan to make a creditable retreat after the disaster of the Seven Days' Battle. In November, 1862, Homans entered the army, and was with Banks in the Red River expedition, and with Early in the Shenandoah Valley campaign, being Acting Medical Director of the Army of the Shenandoah.

Robert E. Jameson (M. D., '61) was engaged in all the battles of McClellan's advance on Richmond, and in his hard fought retreat. He went into the Virginia campaign under Pope, and was at Vicksburg, Jackson, Blue Springs, at the siege of Knoxville, and at Petersburg.

At Cedar Mountain, Francis Leland (M. D., '42) was wounded.

Nathaniel G. Stanton (M. D., '66) went with the army to the second battle of Bull Run. Later he took part in the battles of Chantilly, Rappahannock Station and Manassas.

John T. Heard, of the class of '59, served in the Virginia campaign against Lee's first invasion of the North. He likewise took part in sundry other great battles of the war—Antietam, Fredericksburg, Chancellorsville, and Gettysburg, being wounded in the last battle.

David Dana (M. D., '47) was Surgeon to the 1st Massachusetts Heavy Artillery, enlisting in '61. He was Division Surgeon on General Whipple's staff, and was taken prisoner at Warrenton Junction while attending the wounded men. He resigned, October, 1862.

Edwin H. Brigham (M. D., '68) was a private in the service in the Maryland and Virginia campaigns. He was in

Bank's expedition, and was taken prisoner at the second Bull Run.

Joseph W. Hastings (M. D., '56) served from the battle of Cedar Mountain to the Grand Review. He was present at the second Bull Run, Chantilly, South Mountain, Antietam, Fredericksburg, Lookout Mountain, Chattanooga, Knoxville, and on the march from Atlanta to Savannah.

Joseph W. Merriam (M. D., '62) was with the 18th Massachusetts Volunteers at the second Bull Run and in the Maryland campaign.

Robert Ware (M. D., '56) was killed at Newbern, N. C., caring for the diseased negroes of the place. His colonel wrote of him:

"Among our losses none fell more heavily than when in Washington, April 11, 1863, we followed to his grave our well-beloved surgeon, Robert Ware. He fell a victim to his fidelity to duty; not simple duty dictated by order, but the large heart of a kind and devoted christian man. Disease was making havoc among the negroes of the town; and Ware, ever thoughtful, ever alive to the dictates of his sensitive conscience, hastened to their relief, and spent many hours watching by them, and ministering to their wants, until worn and weary, he fell a victim to the very disease from which he had rescued so many of those helpless and dependent people; dying on the 10th of April 1863. He will ever live in their hearts and memories as in ours, and may we remember his example!"

Barber B. Kent (M. D., '69) was a private in Ware's regiment, and rose to captain in the 60th Massachusetts. George H. Powers (M. D., '65) was Assistant Surgeon in this regiment in 1864.

Rufino A. Olloqui (M. D., '65) was appointed to the 61st Massachusetts Volunteers.

Ebenezer F. Spaulding (M. D., '66) was an Assistant Surgeon in the 7th Wisconsin Volunteers at that brilliant exploit of General Jackson at Manassas Junction, August 28-30, 1862. He likewise served with his regiment at Rappahannock Station, Gaines' Mill, second Bull Run, South Mountain, An-

tietam, Chancellorsville, Brandy Station, Fredericksburg and Gettysburg.

In McClellan's attempt to retrieve the losses sustained by Pope at Manassas, the war was carried into Maryland, resulting in the bloody carnage in the cornfield at Antietam. With an aggregate Union force of 87,000 men (Lee had 40,000), and a total Union loss of 12,400, it is natural to find many alumni of our School on the roster.

We see Samuel F. Haven (M. D., '55), who gave his life three months later at Fredericksburg.

Patrick A. O'Connell (M. D., '60), who had seen hard service with the 28th Massachusetts at James Island, South Carolina, at the second Bull Run, and at Fredericksburg and Gettysburg.

Josiah N. Willard (M. D., '60) who had joined in the chase of Jackson through the Shenandoah Valley, in March, 1862, and had been present at the siege of Yorktown, and on the march to the Chickahominy. His battles include all those incident to the '62 advance on Richmond, and the resistance to Lee's invasion of the North, with his subsequent retreat. Willard was in the battles of Spottsylvania, Hanover Court House, Cold Harbor and Petersburg.

George E. Francis (M. D., '63) had been in Pope's retreat. In '63 he entered the navy and took part in the Red River campaign.

Francis M. Lincoln (M. D., '54) who was in the Seven Days' Battle, and at Sharp's Mountain, and later at Fredericksburg, Richmond and Petersburg.

Arthur H. Cowdrey (M. D., '57) was made Surgeon after the battle of Antietam, and as such was at Fredericksburg, Gettysburg and Petersburg.

George N. Munsell (M. D., '60) had been at South Mountain, and was also at Fredericksburg.

James F. Sullivan (M. D., '61) went out with the 9th

Massachusetts Volunteers, and was at Fredericksburg, Chancellorsville, the Wilderness and Spottsylvania.

James Oliver (M. D., '62) was taken prisoner at the second Bull Run; we find him present at the battles of South Mountain and Antietam; at Knoxville he shared the trials and hardships of the 21st Massachusetts Volunteers, and with them went into the Wilderness; was at Spottsylvania, Bethesda Church, Cold Harbor, and the siege of Petersburg. Reënlisting with the "Old Sixth," he took part in the siege of Richmond.

Albert Wood received his M. D. in '62, and lost no time in reaching the field. He was at the second Bull Run, Antietam and Fredericksburg. Later, as Surgeon in the 1st Massachusetts Cavalry, he was at the surrender of Vicksburg, in the Wilderness, Cold Harbor and Petersburg.

Lucius Manlius Sargent (M. D., '57) and Lincoln R. Stone (M. D., '54) went out together as Surgeon and Assistant Surgeon, 2nd Massachusetts Volunteers. Sargent resigned and was appointed captain in the 1st Massachusetts Cavalry, and went with his command with the Army of the Potomac. His battles include Antietam, Kelley's Ford, South Mountain, Fredericksburg, Chancellorsvile, Brandy Station, and Culpeper, Va. He was killed December 9th, 1864, near Bellfield, Va. Stone was taken prisoner at Winchester, Va., in May, '62, rejoining his regiment, however, in time for the summer campaign. After his service at the assault on Fort Wagner he was appointed Assistant Surgeon in the U. S. Volunteers, and was brevetted lieutenant-colonel just before muster-out in '65.

Among the severely wounded at the battle of Antietam was Phelon C. Whidden (M. D., '66). Discharged December 11th, '63, he enlisted in the navy, December 16, and served in the blockading movements of '64 and '65. Marshall E. Simmons (M. D., '60) was with the 22nd New York Volun-

teers in all the great battles of his command from Antietam to Gettysburg inclusive.

George E. Head (M. D., '55) joined the 11th Infantry, United States Army, with the Army of the Potomac, February, '62. Later he was at Fredericksburg, Gettysburg, Mine Run, Rappahannock Station, Wilderness, Spottsylvania, Bethesda Church and Petersburg.

When Lee blocked the path of Burnside at Fredericksburg (Dec., 11-14, 1862) a sacrifice of over twelve thousand Union men resulted. Besides those Harvard medical graduates previously mentioned as taking part in this battle there were present Henry P. Bowditch (M. D., '68), our present Professor of Physiology, who entered the service as second lieutenant, 1st Massachusetts Cavalry. Previous to Fredericksburg he saw service at Secessionville. As captain he was in the battles of Stevensburg, Aldie, Upperville, Culpeper, Rapidan Station, Bristoe Station and New Hope Church. He was wounded in this last named battle. With the 5th Massachusetts he was at Petersburg, Baylor's Farm, Point Lookout and on the James River, and was among the first Union forces to enter Richmond. He left the service two months later as major.

Another instructor of the Medical School present at Fredericksburg was Edward B. Dalton, who took his M. D. degree at the College of Physicians and Surgeons (New York) in 1858, three years after he had been graduated at Harvard College. During the Peninsula, Maryland and Virginia campaigns of '61-'62, Dalton served with the 36th New York Volunteers. Afterwards he was Medical Inspector of the Army of the Potomac in all its movements under Grant during '64-'65. He was promoted brevet colonel United States Volunteers in 1865.

Allston W. Whitney (M. D., '52) enlisted as a private in the 2nd Massachusetts on receipt of the news of the attack

upon the 6th Regiment at Baltimore. Two days later he was appointed Surgeon in the 13th Massachusetts Volunteers. To follow this regiment through the war would be to visit every important battlefield and skirmish line from Cedar Mountain to Petersburg. Whitney was with the colors all the time, excepting six months he spent in Libby Prison. He was made brevet lieutenant-colonel in 1865.

Charles F. Crehore (M. D., '59) was in all the battles of the Peninsula campaign in Virginia leading up to Fredericksburg. After participating in that failure of Burnside he fought at Cedar Creek, and was present with the 6th Army Corps at Gettysburg and the preliminary engagements, being in charge of the Ambulance Hospital in the Shenandoah campaign.

John Ryan (M. D., '60) was with the 9th Massachusetts at Fredericksburg, Chancellorsville, Brandy Station, Gettysburg, Bristoe, Rappahannock Station, Wilderness, Spottsylvania, Bethesda Church and Cold Harbor.

William L. Faxon (M. D., '62) was at Fredericksburg and later at Chancellorsvile, Gettysburg and the Wilderness, being taken prisoner during the Wilderness battle of May 5, '64.

Charles M. Kitterdge (M. D., '67) was one of the wounded at Fredericksburg, where his classmate

Edwin Rufus Lewis (M. D.) was sergeant-major of 21st Massachusetts Volunteers. Lewis continued into the Wilderness, and was also in the Spottsylvania, Cold Harbor and Petersburg battles. He was among the wounded at Petersburg. He was also at Knoxville, Tenn.

Royal L. Cleaves (M. D., '69) received his preliminary medical training as Hospital Steward in the Army. That he had an opportunity for practical observation is attested by the fact that he was present at Fredericksburg, Chancellorsville, Gettysburg, the Wilderness, Spottsylvania, Petersburg, and Five Forks.

Robert A. Blood (M. D., '70) was a private in the 11th New Hampshire Volunteers, and experienced the shortcomings of hospital service on the battlefield of Fredericksburg, where he was wounded.

Samuel C. Whittier (M. D., '62) was at Fredericksburg, Chancellorsville, Gettysburg and Petersburg, being in charge of the Division Hospital in many of the battles.

Jerome E. Roberts (M. D., '64) joined the 56th Massachusetts in the Wilderness, and was in seventeen battles prior to a disablement, from which he died February 19th, 1865.

Benjamin H. Mann (M. D., '67) was with the 24th Massachusetts Volunteers as Hospital Steward in all their battles except Newbern and Morris Island.

Other Harvard men actively engaged in the Virginia and South Carolina Campaigns were John L. Robinson (M. D., '59); Hosea M. Quinby (M. D., '68); Charles E. Hosmer (M. D., '67); Edward B. Mason (M. D.,'61). Mason joined the 1st Massachusetts Heavy Artillery on the Potomac, and was taken prisoner at the second Bull Run. His death on September 14, 1863, was due to an injury by the fall of his horse while he was on duty at Maryland Heights; and Nathan Hayward (M. D., '55), who was taken prisoner at Sharpsburg, Maryland, while caring for his fellow alumnus Lieutenant-Colonel Palfrey (H. U., '51). Hayward left the service brevet colonel.

Norton Folsom (M. D., '64) was in the battle of Cross Keys, and in '64 at Newmarket Heights. His reward was a brevet lieutenant-colonelcy.

Joshua J. Ellis (M. D., '52) died on the 17th March, 1863, from the severity of the Virginia campaign.

Other Alumni of the Harvard Medical School who saw service in those battles of the first year or two of the war were Warren Pierce (M. D., '69) who enlisted as a private in the

1st Massachusetts Heavy Artillery, and later was second lieutenant in the 36th United States Cavalry.

Edward R. Cutler (M. D., '63), who served with the 1st Massachusetts Heavy Artillery from September 25, 1863, to the end of the war.

William P. Jones (M. D., '71), who was with Cook's Light Battery from April 19th, '61, to August 2, 1861.

Marcus A. Moore (M. D., '47), who went out October 31st, '61, captain in 1st Massachusetts Cavalry.

Edward B. Holt (M. D., '68), who served in the ranks of the 6th Massachusetts from August 31, '62, to October 27th, 1864.

James G. Maxfield (M. D., '67), who was sergeant in the 6th Massachusetts during '62 and '63, after which he served in the navy.

William H. Ruddick (M. D., '68) was with the 7th Massachusetts Battery and in 1863 was appointed Hospital Steward. He saw active service at Deserted House, Va.; Somerton Road; Siege of Suffolk; in the Red River campaign; Alabama campaign and the capture of Mobile.

John W. Foye (M. D., '60) rose from Assistant Surgeon of 11th Massachusetts, June 13, 1861, to brevet lieutenant-colonel United States Volunteers, March 13, 1865.

The 12th Massachusetts Volunteers saw hard service. John M. Hayward (M. D., '58) was with them from 1861 to 1863, and William H. W. Hinds (M. D., '61) was Surgeon from '63 to '64.

The same story is true of the 15th and 19th Massachusetts Volunteers. The former had as Assistant Surgeon Henry Rockwood (M. D., '55), and Samuel C. Blake (M. D., '53) as Surgeon; while the 19th had Gustavus P. Pratt (M. D., '63).

Frederick S. Ainsworth (M. D., '44) went as Surgeon in the 22nd Massachusetts on June 25, 1862, and resigned July

27, 1865, as brevet lieutenant-colonel United States Volunteers. A long active service faithfully performed.

Thomas Conant (M. D., '68) was second lieutenant in the 29th Massachusetts Volunteer Militia from Fredericksburg to Spottsylvania.

Rowse R. Clarke (M. D., '47) was with the 34th Massachusetts Regiment in the battles of Winchester, Cedar Creek and Petersburg, with all the intermediate engagements.

Albert H. Bryant (M. D., '60) joined the 36th Massachusetts Regiment in August, 1862, and was with it at Fredericksburg, Vicksburg, siege of Knoxville, the Wilderness, and Spottsylvania. He shared the cold, hunger and want experienced at Knoxville in December and January of the winter of '64.

John A. Mead (M. D., '69) was a private in the 39th Massachusetts Volunteers from August 27, 1862, to June 2, 1865, which means that he was a participant in the Wilderness, Spottsylvania, Bethesda Church, Petersburg, and Five Forks battles.

Daniel McPhee (M. D., '63) served as Assistant Surgeon in the 44th Massachusetts after the death of its Surgeon, Robert Ware.

Daniel McLean (M. D., '63) served four months as Assistant Surgeon of the 45th Massachusetts Volunteer Militia upon graduating from the Medical School.

Joseph B. Reynolds (M. D., '62) joined the 49th Massachusetts in time to be present at the surrender of Port Hudson and he remained in the service until April, 1864.

Lucius F. C. Garvin (M. D., '67) and Francis W. Adams (M. D., '68) were private and first lieutenant respectively in the 51st Massachusetts Volunteer Militia in 1862-63.

Following the war in the centre we may trace Harvard men fighting Bragg in the terrible slaughter at Stone River, and in his hard won victory at the " Rock of Chickamauga."

Here died William H. Heath (M. D., '53). Flushed with victory, Bragg pushed on until firmly entrenched on Lookout Mountain. In that famous "Battle Above the Clouds" one follows our men scaling the heights of Missionary Ridge with "Fighting Joe Hooker" until they had planted the stars and stripes upon the highest peak; where they joined with their fellow alumni, who had followed Grant, Thomas, Sherman and Sheridan, in restoring Chattanooga to its permanent guardians. Longstreet, alarmed at the fierceness of the Union fighting, released his hold on Burnside at Knoxville, and thus set free those famine-stricken Union soldiers. Leaving the army under Sherman to enjoy a respite at Chattanooga preparatory to the March to the Sea, let us note those important engagements in which many Harvard men figured along the Mississippi and in Virginia.

In the early scenes at Forts Henry and Donelson we find the genial young Surgeon William B. Gibson (M. D., '62), who left his position as House Surgeon at the Massachusetts General Hospital upon the call for surgeons in the navy. He was on board the Flag-Ship "Hartford" with Foote; and later on the "Sciota" at the siege of Vicksburg. Stricken with fever while on duty at Pensacola, he died, November 8, 1862.

George J. Arnold (M. D., '61) was in the battle of Iuka, and later at Corinth.

Jenckes H. Otis (M. D., '51), who had left College in 1847 "to fit" for medical service in the navy, was assigned to the receiving ship "Ohio" at Boston, on the outbreak of the war.

George T. Shipley and Charles T. Hubbard of the class of 1861 at the Medical School, entered the navy upon their graduation; both served during the greater part of the war.

Among those who subsequently received their M. D. degrees from Harvard, the following were Acting Assistant Surgeons in the navy during the first year or so of the war.

Arthur Kemble (M. D., '63), Henry Johnson (M. D., '65) William H. Campbell (M. D., '65), Henry L. Dearing (M. D., '64), who had two years' experience as Hospital Steward with the 15th Massachusetts Volunteers; Joseph Franklin Perry (M. D., '73), and Winthrop Butler (M. D., '66).

In Pope's brilliant coup, at the attack on Memphis, at Corinth and at Shiloh, we have already noted some of the Harvard graduates present. When Farragut took possession of New Orleans, Palmer C. Cole (M. D., '58) was placed in full charge of the Quarantine Station, and was made Chief Surgeon of the Division. He also served later in the Red River campaign.

Richard J. P. Goodwin (M. D., '65) was with Grant's Army in the operations before Vicksburg.

Two other graduates in that affair at Vicksburg were John E. Sanborn (M. D., '50), who was with Sherman, and George W. Handy (M. D., '68) who went with Grant on that remarkable five days march from Milliken's Bend to Vicksburg, via Port Gibson, Jackson and Black River Bridge. Later he fought at Petersburg, Winchester and Fisher's Hill, where he was wounded in the thigh.

Frank W. Draper (M. D., '69) until recently Professor of Legal Medicine at the Medical School, as a private in the 35th Massachusetts Volunteers, was with Grant on this same march. He was afterwards captain of the 35th United States C. T. in the Wilderness, at Petersburg, and was present at the surrender of Johnston.

Eugene P. Robbins (M. D., '63) was on the U. S. S. "Choctaw" at the Vicksburg siege, where he contracted sickness which caused his death, 27th November, 1863.

George O. Allen (M. D., '66) entered as a Medical Cadet, and was at Vicksburg from the Memphis expedition.

At Baton Rouge, on August 5th, '62, we find Cyrus S. Mann (M. D., '43); John H. McCollom (M. D., '69) at

present Assistant Professor of Contagious Diseases, Harvard. McCollom also served as Hospital Steward at Vicksburg, in the Shenandoah Valley, in the Wilderness and at Cedar Creek.

At the taking of the last obstruction to the opening of the Mississippi (Port Hudson, May 27, 1863) Frederick Winsor (M. D., '55) had come over from Baton Rouge with General Augur.

Robert T. Edes (M. D., '61), who was Professor of Materia Medica and Professor of Clinical Medicine at the School for many years after the war, served in the navy in the various bombardments we are now considering.

Charles W. Heaton (M. D., '67) was captain in the 3rd Corps D'Afrique at Port Hudson and in the Red River expedition.

Nathaniel A. Fisher (M. D., '34) was in the same actions.

Albert H. Blanchard (M. D., '51) remained at Port Hudson for three months after its taking.

Edward L. Sturtevant (M. D., '66) had risen from private to captain in the 24th Maine Volunteers before serving at Port Hudson.

Frederic A. Sawyer (M. D., '56) was taken prisoner at Port Hudson while in charge of the hospital. He had charge of the hospital at Baton Rouge earlier in the campaign.

Thomas B. Hitchcock (M. D., '60) was in the attack on Port Hudson, and afterwards Assistant Medical Director of the Department of the Gulf at headquarters. After the war Hitchcock became Professor of Dental Pathology and Therapeutics at the Medical School.

William L. Bond (M. D., '62) was placed in charge of the General Hospital at Alexandria, Louisiana, after the siege of Port Hudson.

Charles G. Allen (M. D., '64) was a private at this siege, and later was Hospital Steward at Harrisburg while a prisoner. Here he had charge of the Union soldiers who fell into

the enemy's hands at New Market, in Early's invasion of Pennsylvania. In various battles about Petersburg incident to Lee's retreat, Allen won promotion to Assistant Surgeon in the 34th Massachusetts Volunteers. He was also one of those who experienced the trials of Libby Prison.

Walter M. Jackson (M. D., '68) was adjutant in the 2nd Rhode Island Cavalry at the Port Hudson siege.

Azel Ames (M. D., '71) was a Medical Cadet here, and adjutant later.

Reed B. Granger (M. D., '66) arrived in time for the capture of Baton Rouge and served later at Port Hudson. He was brigade ordnance officer on General Dudley's staff in the Red River expedition, and was on the staffs of Major Genrals Gordon, Granger, Hancock, and Torbert.

Samuel A. Davis (M. D., '62) took part in the battles of Donaldsonvile, Winchester, Fisher's Hill and Cedar Creek, after he had served at Port Hudson.

Horace D. Train (M. D., '46) was a captain in the 49th Massachusetts Volunteers in the Louisiana campaign.

Some of the Harvard Medical Alumni serving with the Rhode Island Cavalry in this campaign were David B. Nelson (M. D., '49), Major of the 2nd Cavalry,

William A. Gaylord (M. D., '48), 7th Cavalry, later with the 14th United States Colored Volunteers, and

Albert O. Robbins (M. D., '66), who had two years' experience as Hospital Attendant prior to his appointment, November 22, '63, as Assistant Surgeon to the 2nd Rhode Island Volunteers.

Alexander M. Parker (M. D., '56) was in Libby Prison for four months. His regiment was the 1st Maine Cavalry.

Hooker, attempting to advance on Richmond after Lee had checked him at Fredericksburg, crossed the Rappahannock and Rapidan rivers, leaving to Sedgwick the task of attempting to deceive Lee, and took a position at Chancellorsville.

Lee refused the bait, and prepared his 62,000 men for Hooker's attack. The whole affair as far as the Union troops were concerned was as great a fiasco as that of Fredericksburg. Stonewall Jackson went around Hooker's right and completely surprised the reserves under Howard, losing his own life in the victory. Lee, encouraged by these events, started early in June on his second invasion of the North. He made for Chambersburg, Pennsylvania. General Mead, now in command, gradually closed in, and the two forces met at Gettysburg (July 1, '63). The Confederate forces were checked in that fierce three days battle, but the victory for the Union Army was at a cost of 23,000 men. Had Mead followed up his advantage there seems ground to believe that the war might have been finished in that year.

In previous pages I have noted many alumni who were present during these stirring events. Others present were Joshua G. Wilbur (M. D., '62).

John H. Gilman (M. D., '63) was with the 6th Corps. He was also in the succeeding battles of the war, the Wilderness, Spottsylvania, Cold Harbor and Petersburg.

Thomas Crozier (M. D., '63) was with the 3rd Corps Hospital as Assistant Surgeon, and accompanied Grant in his campaign against Richmond in '64, taking part in all the battles and skirmishes on the way.

William D. Knapp (M. D., '63) was with the 19th Massachusetts Volunteers at the Second Fredericksburg, Gettysburg and Bristoe Station, where he was wounded.

Murdock Macgregor (M. D., '63) was a Hospital Steward before receiving his degree of M. D. He was at Chancellorsville, at Gettysburg as Assistant Surgeon and Surgeon, and served with the 20th Massachusetts Volunteers at Mission Ridge, and before Atlanta with Sherman.

Edgar Parker (M. D., '63) was wounded and taken prisoner at Gettysburg. He had previously served with the 13th

Massachusetts Volunteers at Fredericksburg and Chancellorsville.

Warren Webster (M. D., '61) was with the Army of the Potomac; he was at Chancellorsville and Fredericksburg, being one of the wounded, and was in charge of Union prisoners in the former battle. Of him Henry I. Bowditch says, "No one did greater credit to the School." He was made brevet lieutenant-colonel United States Army in 1866.

John E. Parsons (M. D., '63) was at Chancellorsville and Gettysburg, and later entered the navy.

Edward H. Pettengill's (M. D., '66) nine months' service included Gettysburg.

Stephen F. Elliot (M. D., '48) was practicing medicine in California on the outbreak of the war. He immediately entered the service under General Sumner in the Texas expedition. Later coming east, he was appointed Brigade Surgeon United States Volunteers for service in the South. Besides James Island and Light House Inlet, he served at Fredericksburg, White House and City Point. He was the first to plant the U. S. flag on Morris Island at its taking. The colonel of the 115th New York Infantry says of Elliot:

"* * * my Surgeon and two Assistant Surgeons were sick in the hospital and the sick report of my Regiment numbered some two hundred men. Surgeon S. F. Elliot left a comparatively easy position on General Strong's Staff and volunteered to come to our relief; * * * * he remained with us until the Brigade to which he was assigned moved upon Morris Island. * * * As an officer I consider him in every respect efficient; as a Surgeon he had no equal, and as a gentleman everything that could be desired; accomplished, true and noble-hearted."

General Seymour's aide writes,

"I cannot forget the night of the 18th—amid the confusion that prevailed in consequence of our repulse—the wounded bleeding and dying—the retreat when all that were unable to crawl to the rear seemed to be abandoned and left to their fate—you by your devotion, calmness, and bravery rescued many of those noble men who would otherwise have perished. When we reflect how dreadful must be the sufferings and agonies

of those who are wounded and unable to move, left to stiffen on the battlefield, or await removal to more convenient places before receiving the attention so much needed, then and only then, that we can fully appreciate the noble brave man who imperils his own life to ameliorate the sufferings, and if possible save his fellowmen. The removal of Generals Seymour and Strong from their perilous position after they had been wounded must be solely attributed to you. * * * Through your skilful management and untiring energy everything was done for the wounded that could be done under the then existing circumstances."

In the naval engagements on the James River in '63, we find Isaac Hills Hazelton (M. D., '61) and Samuel W. Abbott (M. D., '62), both at Fort Wagner. Abbott was present at Petersburg, and other movements of the Army of the Potomac in '64.

Benjamin F. Clough (M. D., '69) was a Surgeon's Steward in the navy in the Red River expedition.

Benjamin A. Sawyer (M. D., '65) was with the Army of the James for three months in '64. He had been Hospital Steward in the 50th Massachusetts Volunteers in '62.

Stephen W. Driver (M. D., '63) was Surgeon on the "Saxon," in the Butler expedition of February, '62.

George S. Eddy (M. D., '66) served on the North Atlantic Blockade service and on the James River.

Henry T. Mansfield (M. D., '69) on the U. S. S. "Nipsic," of the South Atlantic Squadron.

Henry O. Marcy (M. D., '64) was with the 43rd Massachusetts Volunteers in the North Carolina campaign of '63. He then joined the 35th United States C. T., and took part in the siege of Charleston and in the Florida expedition, being Brigade Surgeon in the latter.

Horace S. Lamson (M. D., '63) joined the 3rd Rhode Island Heavy Artillery immediately after graduation, and was at the battle of Morris Island, S. C.

Augustus Remick (M. D., '68) was a private in 7th Massa-

chusetts Battery, and served until the capture of Mobile, taking part in the Red River campaign.

Burt G. Wilder (M. D., '66) was in the Carolina expeditions of '62, and at the siege of Charleston.

Albert L. Mitchell (M. D., '63) joined the 37th Massachusetts upon graduating from the Medical School. He was a prisoner later in the same year.

The Army of the Potomac crossed the Rapidan and entered the Wilderness May 4th, '64. Mead was in immediate command with 120,000 men. Grant was now Lieutenant-General in command of all the Union armies. Sherman was given charge of the Mississippi Department. From this combination was destined to result the final victory for the North. Let us first follow Sherman, whom we left at Chattanooga. He advanced from this stronghold May 6th, '64, with 100,000 men, comprising the Army of the Cumberland under Thomas; the Army of the Tennessee under McPherson; and the Army of the Ohio under Schofield. The Confederate leader was Johnston. If we follow the movements during the next four months we shall find the army fighting its way at Dalton, at Resaca, at Dallas, at Kenesaw, through a quagmire, over swollen streams and along almost impassable roads, until Johnston's successor, Hood, was driven from Atlanta. This march cost the North 32,000 men, and the Confederacy 35,000. After a march of over one hundred miles to the rear, to protect his base, Sherman began the famous March to the Sea. Many of our graduates both on land and sea helped to make possible Sherman's message to Lincoln, "I beg to present you as a Christmas gift the city of Savannah." Pushing on again in February, 1865, Sherman's course lay over horrible roads; now he was fighting Johnston, now forcing him onward through North Carolina, by Goldsboro, up to the gates of Raleigh, where Johnston surrendered, April 26, 1865. To mention the many Harvard men taking part in this long march

of almost twelve months, would be a repetition of many names already given. A few new names can however be inserted here, for they deserve our recognition.

George F. French (M. D., '62), who had been personal staff surgeon to General Grant at Vicksburg, was Surgeon-in-Chief, 1st Division, 15th A. C., throughout the march. He was promoted brevet lieutenant-colonel United States Volunteers in July, '65.

Charles E. Briggs (M. D., '56), who had served since the battle of Newbern, was in charge of the hospital at Savannah.

Bowman B. Breed (M. D., '57) was in the battle of Nashville, and had charge of the No. 1 Hospital.

George A. Collamore (M. D., '59) joined Sherman at Chattanooga, was captured at Atlanta, was Post Surgeon at Columbia, rejoined Sherman at Goldsboro, and was present at Johnston's surrender.

George E. Stubbs (M. D., '63) was at Chattanooga and Nashville, having charge of hospitals at both places.

Charles W. Oleson (M. D., '66) also had charge of a hospital at Nashville.

Robert Willard (M. D., '64) was with the navy in the various movements to aid the army in 1863-65.

George A. Bright (M. D., '60) was on blockade duty during the whole war.

Frederick B. A. Lewis (M. D., '60) was similarly occupied.

Frederick M. Dearborn (M. D., '65) was Surgeon in the navy from '62.

Ralph C. Huse (M. D., '66) had his thigh fractured in the second expedition to Fort Fisher.

Algernon S. Nichols (M. D., '69) was a private in 17th Massachusetts Volunteers, and took part in the battles of Balchelor's Creek and Kinston.

Hermogene S. Balcom (M. D., '58) was Surgeon in a

Western regiment and served under Sherman until the close of the war.

Grant emerged from the Wilderness on the 7th of May, 1864, and if we follow him during the campaign we shall witness the bloody struggle for position at Spottsylvania (May, '64) between the two leaders—Grant and Lee; the desperate race for Petersburg, with its resulting artillery battle at Cold Harbor (June 1-4, '64); the siege following the unsuccessful attempt to dislodge Lee; the persistency with which Grant hammered at this obstacle to his advance on Richmond; the horrors of the fighting on July 29th, 1864; and finally the grand attack on Richmond, April 2nd, 1865. It was during this stage that Sheridan made that famous ride up the Shenandoah and won the victory described by one of our alumni, an eye witness (William H. Thayer, M. D., '44*). Five Forks and Sailor's Creek were the convulsions preceding the death of the Confederacy at Appomattox Court House on the 9th of April, 1865. The names of some of our Alumni on the "Roll of Honor" in this last year of the Civil war occur many times in the story and have already been mentioned. Here are others:

Alfred A. Stocker (M. D., '53), who was with McClellan in the Peninsula campaign; he received a sunstroke at Chantilly.

Samuel W. Fletcher (M. D., '58) was Assistant Surgeon 32nd Massachusetts Volunteers from the fight at Rappahannock Station until June 1st, '65.

Thomas Dawson (M. D., '64) was with Grant from the Wilderness to Poplar Grove Church. He was one of the victims of the mine explosion at Petersburg.

Alexis J. Sullivan (M. D., '68) was in both army and navy, serving at Bristoe Station, Rappahannock Station, Mine Run,

* This is in manuscript form at the College Library, Cambridge.

Wilderness to Cold Harbor, and later in the Mississippi Squadron.

Francis M. Weld (M. D., '64) was with the navy from May, '62, to January, '64. Joining the Army of the Potomac in the Wilderness, he accompanied the 27th United States C. T. on that march to Petersburg, taking part in General Terry's assault on Fort Fisher and Wilmington.

John Jay Meigs (M. D., '60) went to the front with the Sixth Corps, and was in all the battles from Spottsylvania to Petersburg. He was in the Shenandoah campaign against Early in '64.

James G. Porteous (M. D., '66) was at South Anna, Suffolk, Swift Creek, Drury's Bluff, Cold Harbor, Petersburg, Fair Oaks and Fort Harrison.

John O. Webster (M. D., '68) was a private in the 8th Maine Volunteers, and took part in the early Virginia, South Carolina, and Florida movements. He was one of those "bottled up" at Bermuda Hundred with the futile Butler. He was later at Drury's Bluff, Cold Harbor and Petersburg.

Franklin Nickerson (M. D., '63) was in the navy, and in the same Bermuda Hundred expedition.

John F. Butler (M. D., 54) was with the 39th Massachusetts from the siege of Petersburg to Appomattox.

Robert Disbrow (M. D., '65) was given a special examination for his degree at Harvard and reached the army in time for service at Hatcher's Run and Petersburg.

Albert L. Norris (M. D., '65) was in the 18th A. C. At Petersburg he was in the field hospital, and assisted in the care of the victims of Burnside's Mine.

Benjamin F. Moulton (M. D., '67) was one of the many students of the School who left for the front in 1863. He was at Point-of-Rocks Hospital, at Appomattox, and at Fair Ground Hospital, Petersburg.

Sanford Hanscom (M. D., '68) was adjutant in the fighting about Petersburg, at Richmond and at Appomattox.

George E. Mecuen (M. D., '75) was a private at Cold Harbor, where he was wounded.

George P. Braman (M. D., '66) was at Petersburg and Richmond. After the war he entered the regular service and was assassinated at Baton Rouge, August 15, 1868.

Michael F. Gavin (M. D., '64) was with the 57th Massachusetts Volunteers before Petersburg.

Ira S. Smith (M. D., '69) rose from private to captain in the United States C. T. He was at Forts Wagner and Sumter, as well as in the battles of the Wilderness, at Bermuda Hundred and Petersburg.

Lorenzo S. Fox (M. D., '63) was in the battles before Richmond. He received his commission in the 26th Massachusetts Volunteers five days after his graduation, and was sent to the Department of the Gulf, where he served two and one-half years. He afterwards accepted a contract appointment to serve under Butler, his fellow-townsman, and in the Army of the James, where he had charge of the 10th Army Corps Base Hospital.

Another fellow-townsman of Butler in the medical service was Moses Greeley Parker (M. D., '64). He entered the service immediately after graduation and was assigned to the 57th Mass. Regiment of Volunteers as assistant surgeon. He was transferred to Fortress Monroe, where Butler placed him in the 2nd United States Colored Cavalry. He accompanied his regiment in the engagements at Suffolk, Drury's Bluff, Point of Rocks, and at the sieges of Petersburg and Richmond. He was surgeon in chief and executive officer at Point of Rocks Hospital. His discharge is dated May 24, '65.

John M. Eaton (M. D., '56) was with the 55th United States C. T. in the Department of the Tennessee.

William H. Thayer (M. D., '44) was Surgeon to the 14th

New Hampshire Volunteers, and was with Butler before joining Sheridan in the Shenandoah Valley; he was in the battles of Winchester (Sept. 19, '64) and Cedar Creek. He was Chief Surgeon to the forces at Savannah in 1865.

Augustus C. Walker (M. D., '66), who had been in the Department of the Gulf as Assistant Surgeon 133rd New York Volunteers, joined the Army of the Shenandoah and was at Snicker's Gap and Winchester.

Robert White (M. D., '67) left the School in '64, and was in the battles of Fisher's Hill, Orange and Alexandria Railroad.

John Spare (M. D., '42) was in the navy as Assistant Surgeon, was at Fort Fisher and in the various blockading movements of the Gulf Squadron.

John F. Stevenson (M. D., '61) was Surgeon to the 29th Connecticut Volunteers, and is said to be the first surgeon who entered Richmond after its surrender.

Samuel L. Dutton (M. D., '60) was on duty near Richmond and in the battle of Drury's Bluff.

George Derby (M. D., '43), who had served as surgeon in the 23rd Massachusetts Volunteers since '61, and had been in the battles of Roanoke Island, Newbern, Kinston, Goldsboro and Whitehall, was at Bermuda Hundred and Drury's Bluff, as well as the other battes of the expedition.

George S. Osborne (M. D., '63) had charge of the hospitals for colored refugees at Fort Monroe and at Hampton. He joined his regiment at Chancellorsville, and was present at Gettysburg and the succeding battles up to January, '64.

David F. Lincoln (M. D., '64) was on the U. S. S. "Montgomery" during the blockade off Mobile and Wilmington.

Edward Wigglesworth (M. D., '65) was with the Sanitary Commission in Virginia during the summer following his graduation from College (1861). During McClellan's Seven Days battles, Wigglesworth was Hospital Steward with the

45th Massachusetts Volunteers, taking part in the various North Carolina battles. He was a Volunteer Army Surgeon, Army of Potomac, in '64.

Herbert J. Pratt (M. D., '68) was with the Army of the James before Richmond.

Rufus P. Lincoln (M. D., '68) was second lieutenant in that famous 37th Massachusetts Regiment which saw such hard service from Fredericksburg, and the subsequent battles on that march from the Wilderness. He remained with the 37th until May, 1865, at which time he was colonel of the regiment.

Another Harvard Alumnus with the 37th Massachusetts was Charles H. Inches (M. D., '65) who joined as Assistant Surgeon in April, 1865. He was transferred to the 20th Massachusetts in June, '65.

John G. Perry (M. D., '63) had been the Assistant Surgeon in this latter regiment, but resigned August 10th, 1864.

John B. Garvie (M. D., '63) was Assistant Surgeon in the 1st Massachusetts Volunteers from August 7th, 1863; his classmate

Neil K. Gunn was Assistant Surgeon with this regiment at the time of his death, June 3, 1863.

Samuel H. Durgin (M. D., '64) and George G. Tarbell (M. D., '65) served as Assistant Surgeons in the Massachusetts Cavalry in 1864 and 1865.

James H. Denny (M. D., '67) and

George E. Mason (M. D., '65) were Assistant Surgeons in the Massachusetts Heavy Artillery during the period November, 1863, to September, 1865.

Other Alumni who served with Massachusetts Regiments during 1864 and '65 were George H. Jones (M. D., '64), Assistant Surgeon in the 5th.

Frank S. Hillard (M. D., '74), private in the 5th.

John W. Parsons (M. D., '65), Assistant Surgeon to the 24th, and

Charles F. P. Hildreth (M. D., '61), as Surgeon to the 40th.

John T. G. Nichols (M. D., '59),

Charles F. Foster (M. D., '41) and

William C. Tracy (M. D., '66) were with the 12th Unattached Massachusetts stationed at Provincetown, Massachusetts, in 1864.

Henry E. Holland (M. D., '46) was with the California Battalion, which was united with the 2nd Massachusetts Cavalry, January 3, 1863; he served until November 28, 1864.

Henry Tuck (M. D., '67) was attached to a Field Hospital at Appomattox.

John L. Fox (M. D., '35) entered the navy in 1837 as Assistant Surgeon, and was Fleet Surgeon with the Atlantic Blockading Squadron in '64.

Otis E. French (M. D., '41) went out with the 114th Ohio Volunteers, and was Staff Surgeon at Alexandria and Fort Gaines.

Augustus Mason (M. D., '44) and

Alonzo C. Webber (M. D., '49) went out with the 43rd Massachusetts Volunteers as Assistant Surgeon and Surgeon respectively. They served in battles of the North Carolina expeditions.

Floyer G. Kittredge (M. D., '45) had charge of the General Hospital at Baton Rouge.

Henry A. Martin (M. D., '45) was with the 2nd Corps (Hancock's) in the Army of the Potomac.

Charles H. Crane (M. D., '47) entered the army in '48 as Assistant Surgeon, and served through the war in the Department of the South, rising to brevet brigadier-general in '65. Afterwards he was acting Surgeon General of the United States Army, and in 1882 was made Surgeon General.

Thomas F. Oakes (M. D., '52) was with the 56th Massachusetts Volunteers as Surgeon in Grant's campaigns of '64-'65.

John Blackmer (M. D., '54) was at Fort Fisher.

Woodbridge R. Howes (M. D., '54) was Assistant Surgeon in the battles of the North Carolina campaign of '63.

Henry W. Browne (M. D., '56) went out as a private in the 16th Massachusetts Volunteers in 1861. He was surgeon in the 76th United States C. T.; in '63 he was in the Kinsman-Cotton naval battle before Mobile.

Thomas W. Leach (M. D., '57) was Surgeon in the navy, and present at the siege of Mobile.

Abiel W. Nelson (M. D., '61) was in the Peninsula and Virginia campaigns of '62 and '63.

Edward A. Whiston (M. D., '61) served three years as Surgeon, taking part in the battles from the seven days' retreat to the end of the march of the Army of the Potomac. He had charge of the 3rd Corps Hospital at Gettysburg, and a Field Hospital of the Army of the Potomac.

Thomas M. Drummond (M. D., '62) was Assistant Surgeon in the navy at the capture of Mobile.

Daniel F. Leavitt (M. D., '62) was with Banks in the Red River Campaign, and with Sheridan in the Shenadoah Valley.

Nathan T. Hobart (M. D., '66) saw service in South Carolina and Georgia for a year or more before receiving his degree.

George H. Larabee (M. D., '64) was engaged as Assistant Surgeon of the 1st Massachusetts Heavy Artillery on duty in Virginia when his degree was granted him.

The same is true of George B. Peck (M. D., '63).

Abiram F. Squire (M. D., '67) was a private in the 74th Regiment National Guard of New York in the summer of '63.

James V. Tabor (M. D., '67) was at Hatcher's Run, Clover Hill and Appomattox.

Frederic N. Burgess (M. D., '65) was Acting Assistant Surgeon before Richmond.

Oliver F. Wadsworth (M. D., '65), later Professor of Ophthalmology in the School, served as Assistant Surgeon in the 5th Massachusetts Cavalry in Virginia in '65, and subsequently on General Weitzel's staff in Texas.

Charles W. F. Hamilton (M. D., '65) was Surgeon with the United States C. T. Cavalry from February, 1865.

Benjamin McCluer (M. D., '52) was Surgeon of the 9th Iowa Volunteers from '63 to '66.

Henry L. Hammond (M. D., '66) was in the battle of Hatcher's Run, Va., in '65, acting as Assistant Surgeon.

George A. Munro (M. D., '66) was Surgeon in the 5th Rhode Island Regiment and had charge of the Medical Department at Three Forks. He was wounded at Donaldsonville, and was taken prisoner.

Franklin B. Kimball (M. D., '58) was appointed Surgeon in the 3rd New Hampshire Volunteers, April 20th, 1865.

Thomas T. Graves (M. D., '71) was a captain and A. D. C. on the staff of General Godfrey Weitzel from September, 1864. He was mustered out in '67.

In the navy during the war there were many Harvard Medical Alumni. I have already mentioned several whose duties brought them into touch with the army in sundry important engagements. There were others who spent their time on monotonous blockade duty, enlivened by the occasional chase of a suspicious looking craft or midnight attacks upon blockade runners.

In the Gulf Squadron were:

Theoron Woolverton (M. D., '61).

Oliver D. Root (M. D., '54), who died at New Orleans, October 30, 1863.

Frederick H. R. Phillipps (M. D., '65).

Benjamin F. Pierce (M. D., '60).

Giles M. Pease (M. D., '63), who later joined the 54th Massachusetts Volunteers and served in the North Carolina, South Carolina and Florida campaigns of '63 and '64.

David Mack (M. D., '63).

Anson P. Hooker (M. D., '55).

Joseph F. Gould (M. D., '59).

Jesse F. Frisbie (M. D., 61), afterwards in the army.

Frank W. Brigham (M. D., '65).

John G. Park (M. D., '66).

Joseph A. Bubier (M. D., '65), who in '63 was Fleet Surgeon on the Pacific coast.

George H. Bull (M. D., '67).

John E. Cobb (M. D., '61).

Charles H. Wheelwright (M. D., '37), who died at Pilotstown, Louisiana, on the 30th July, 1862.

James M. Flint (M. D., '60) served as Assistant Surgeon and Surgeon during the war, remaining in the service after the surrender of Lee.

Peter P. Gilmartin (M. D., '65) had served fifteen months (1863-64) as Acting Assistant Surgeon in the navy prior to taking his degree at Harvard.

Archibald C. Fowler and William S. Bowen received their M. D. degrees in 1867. Both had previously served in the navy as surgeons, and Bowen remained in the service until 1873.

Charles A. Wilson (M. D., '69) was a private in the 25th Massachusetts Volunteers for two years before he enlisted as Surgeon's Steward in the navy, June, 1863. He was discharged June 30, 1865.

In the Mississippi Squadron were:

Stephen Cushing (M. D., '66).

Martin L. Gerould (M. D., '66).

David H. Hayden (M. D., '63).

Scollay Parker (M. D., '66), who served also in the North Atlantic Squadron in '64.

Arthur Ricketson (M. D., '60).

John Stearns (M. D., '60).

Charles E. Stedman (M. D., '55).

Hiram C. Vaughan (M. D., '64), who joined the navy on receiving his degree; he had been a Hospital Steward and captain in the Louisiana campaign of '61, '62 and '63.

Thomas Welsh (M. D., '43).

Charles E. Vaughan (M. D., '63).

John H. Clark (M. D., '62).

John Laing Clark (M. D., '66).

Edgar L. Draper (M. D., '67) was Medical Cadet in Washington Hospitals from '62 until he entered the navy, where he served until '65.

With the Atlantic Squadron we find:

Charles H. White (M. D., '62).

Samuel G. Webber (M. D., '65).

Henry A. Richardson (M. D., '61).

John Mills Browne (M. D., '52) was in action with the Confederate "Alabama," June, 1864, having previously served on the "Kearsarge."

Charles H. Burbank (M. D., '59) also served in the South Atlantic Squadron.

George C. Webber (M. D., '63) was with Commodore Barney in the North Atlantic Squadron, and served until 1865.

Ira W. Bragg (M. D., '59) died at New Orleans in October, 1864. He had been in the navy as Surgeon for more than two years.

Edmund H. Stevens (M. D., '67) had been a Medical Cadet with Farragut at Mobile, and in 1865 he was Acting Assistant Surgeon in the Army of the Potomac.

Many teachers of the Medical School, as well as students and graduates, entered the service as surgeons in the various

hospitals established during the war. Some of these teachers entered the fighting corps later and took part in many battles, while others honorably fulfilled more peaceful obligations to their country and fellowmen.

William E. Townsend (M. D., '44) was in charge of the United States Army Hospital established in the residence on Pemberton Square, Boston, which R. M. Mason offered to the Government.

At the Readville (Massachusetts) United States General Hospital were Francis C. Ropes (M. D., '60), Merrill B. Campbell (M. D., '66) and H. H. A. Beach (M. D., '68).

Daniel T. Nelson (M. D., '65) served at the Mason Hospital under Townsend until he received his degree, when he joined the Army of the Potomac, and had charge of the Post Hospital before Richmond.

Benjamin Joy Jeffries (M. D., '57) was on duty in Boston Harbor from '62 to '65.

Joseph W. Cushing (M. D., '61) and Francis B. Greenough (M. D., '66) were at the Lovell General Hospital, Rhode Island, from '62 to '65.

Algernon Coolidge (M. D., '53) was at this Hospital before going to the Amory Square Hospital, Washington.

James Wightman (M. D., '63).

Charles C. Tower (M. D., '59).

Charles W. Swan (M. D., '64).

J. Collins Warren (M. D., '66).

Charles B. Porter (M. D., '65) were all at the Amory Square Hospital, Washington.

William Woods (M. D., '65) was Hospital Steward at the Harwood Hospital in Washington.

The Judiciary Square Hospital in Washington was a great Harvard headquarters. Two Harvard teachers were assigned there in 1862,—Calvin Ellis (M. D., '49) and David W. Cheever (M. D., '58).

With them were associated Alfred H. Haven (M. D., '61), in charge of the Hospital at Alexandria in '64.

Calvin G. Page (M. D., '55), and

Francis H. Brown (M. D., '61); he was also at the headquarters of the Army of the Potomac near Antietam.

Charles W. Fillmore (M. D., '56) was at the Desmarres Eye and Ear Infirmary in Washington, and

Lewis G. Lowe (M. D., 64) and

James F. A. Adams (M. D., '66) were Medical Cadets at the Judiciary Hospital; Adams went into the navy in 1864.

Others stationed at Washington Hospitals were Alonzo L. Stickney (M. D., '62) at the Douglas Hospital, and

William C. Flowers (M. D., '61) at the Lincoln Hospital.

In the Field Hospitals of the Army in Virginia were Andrew D. Blanchard (M. D., '46) at Fort Monroe, and at Yorktown.

Benjamin T. Crooker (M. D., '61) in the same places.

Daniel P. Gage (M. D., '55) at Fairfax Court House.

Francis A. Howe (M. D., '54) at the Wheaton Hospital, Yorktown.

William O. Johnson (M. D., '48) at Alexandria.

Lucius L. Scammell (M. D., '42) at Arlington Heights.

Seth L. Sprague (M. D., '50) at Fort Monroe and later at Trinity Hospital, Washington.

Joel Seaverns (M. D., '54) at Yorktown and at Fort Warren, Boston Harbor.

Gideon F. Barstow (M. D., '37), Christopher C. Holmes (M. D., '40) and Nathaniel A. Robbins (M. D., '64) were at Fort Warren, while

Charles H. Hildreth (M. D., '51), George A. Perkins (M. D., '44) and John Massey (M. D., '68) were at Salem and Gloucester Forts.

In Georgia James E. De Wolf (M. D., '66) and Henry P.

Shattuck, of the same class, and Edward L. Barteaux (M. D., '67) were together at Savannah.

At the New Orleans Hospital, Edwin J. Morgan (M. D., '66) was a steward and

Charles F. Barnard (M. D., '37) Medical Officer in Charge. Barnard had a hospital service again at the Memphis and Cumberland Hospitals.

Adoniran Judson Wakefield (M. D., '55) was Hospital Surgeon at Beaufort, S. C.

Alexander S. Mackenzie (M. D., '63) was at the Naval Hospital, Pensacola.

At the siege of Charleston were Arthur A. Holmes and Cornelius S. Jackson; both received their M. D. degrees in '65, and were assigned to the hospitals at Georgetown and at Darlington, respectively, while

Charles N. Miller (M. D., '68) was a Hospital Steward, and later at Jacksonville and Tallahassee.

Ezra Dyer (M. D., '59) had charge of the Ophthalmic Department of the Satterlee United States Hospital in West Philadelphia.

Samuel Worcester (M. D., '68) was a Medical Cadet at the National Hospital, Baltimore.

Henry S. Plympton (M. D., '60) was at the General Hospital, David's Island, New York. He died in Cambridge, Massachusetts, September 25, 1863.

Moses R. Greely (M. D., '50) went with the 3rd Minnesota Volunteers in 1862 against the Sioux Indians. He had charge of the Hospital at Helena, Arkansas, and at Little Rock. He was with General Shaler until September, 1865.

Hugh F. McNary (M. D., '63) was in the Military Hospital at Louisville, where he qualified for his Harvard degree.

Howard M. Randlett (M. D., '64) was in charge of the Naval Hospital at Philadelphia, and Wallace Bolan (M. D.,

'63) was Surgeon to the National Soldiers' Home at Togus, Maine.

The following well known physicians and surgeons of the Medical School acted as a Board to examine candidates for appointments as Surgeons and Assistant Surgeons of the Massachusetts Volunteer Regiments:

James Jackson (resigned); George Hayward (died 1863); S. D. Townsend; John Ware (resigned); Samuel G. Howe (resigned); J. Mason Warren; Samuel Cabot, Jr.; Richard M. Hodges; George H. Lyman (resigned); George H. Gay; William J. Dale; John C. Dalton, Sr. (died 1864); Robert W. Hooper; Samuel L. Abbott.

There are many graduates of the School who are known to have served in the war, but information regarding them is not as complete as that given in the previous pages of this chapter. I am obliged, therefore, to place all such men in a list by themselves. If it were possible to obtain all the data concerning them, Harvard's record in the Civil War and in the War with Spain would appear still more creditable. Here are the men, then, whose complete records we lack; albeit several of them are still active among us:

Francis M. McLellan ('43), Surgeon 13th New York Artillery.

Horace Thurston ('44), Acting Assistant Surgeon, four months in 1865.

Jabez B. Upham ('47), Acting Assistant Surgeon United States Army, '62-63.

Samuel L. Bigelow ('48), Brigade Surgeon United States Volunteers, 1862. Died November 1, 1862, at Hagerstown, Maryland.

James W. Hartley ('52), Surgeon United States Volunteers.

William G. David ('54), Surgeon 96th New York Volunteers.

James P. Walker ('56), Assistant Surgeon 4th New Hampshire Volunteers.

Benjamin F. Campbell ('57), Acting Assistant Surgeon United States Army, 1862-1865.

Edward A. Crane ('57) served on the United States Sanitary Commission from 1861-64.

Stephen Foss ('59).

Theodore S. Floyd ('61), Acting Assistant Surgeon United States Army.

Thomas H. Pryor ('62), Acting Assistant Surgeon United States Army, 1863.

William K. Fletcher ('62), Acting Assistant Surgeon United States Army, 1862 to December, 1864.

John F. Hurley ('63), Surgeon.

Samuel W. Langmaid ('64), Acting Assistant Surgeon United States Army, 1864-1865.

James McG. Campbell ('64).

John J. McSheehy ('64), Acting Assistant Surgeon United States Army, 1864.

John Dole ('64), Medical Cadet, United States Army, 1862.

William A. Browne ('64), Acting Assistant Surgeon United States Army.

William B. Buckley ('65), Medical Cadet, United States Army, 1863; Acting Assistant Surgeon United States Army, '65.

William H. Hull ('65).

Andrew McLaren ('65).

John T. Cameron ('65), Acting Assistant Surgeon United States Army, 1864-65.

Alexander F. Falconer ('65), Acting Assistant Surgeon United States Army, 1865.

Frank Lawson ('65), Acting Assistant Surgeon United States Army, 1865.

Henry H. Sproat ('65), Acting Assistant Surgeon United States Army, 19th United States C. T., 1865.

Theodore F. Breck ('66), Acting Assistant Surgeon United States Army, 1865.

Cornelius A. Ahearne ('66), Acting Assistant Surgeon United States Army, 1864-65.

Calvin Pratt ('66), Medical Cadet United States Army, 1862-63.

William F. Monroe ('66), Acting Assistant Surgeon United States Army.

Charles Mackin ('66), "served through the war and later in the Indian Wars."

James G. Maxfield ('67).

Hugh Doherty ('67), Medical Cadet United States Army.

William J. Clarke ('67), private in Vermont Brigade, 1863; musician brigade band; lieutenant Signal Corps United States Army, 1864-65.

Charles G. Carleton ('67), Medical Cadet United States Army, '64-'65; Acting Assistant Surgeon United States Army, 1865.

Theodore S. Keith ('68), Medical Cadet United States Army, 1862. Acting Assistant Surgeon United States Army, 1866.

Rollin C. Ward ('70), "Captain in the Army during the War."

Shirley H. France ('71), private 19th Pennsylvania Volunteers, 1861, and served three months.

From the incomplete and meagre records it is impossible to obtain a list of surgeons who served in the Confederate Army. Teachers in the school tell me that there were many students from the South, at the outbreak of the war, and very likely they gave their services to the Confederacy. A diligent search into all possible sources of information gives me but two names. William Augustus Davis (M. D., '40), and

Joseph Clay Habersham (M. D., '53). I cheerfully add these names to our School's Roll of Honor.

SPANISH WAR, 1898.

In the war with Spain many Harvard Medical graduates took prominent parts. It is impossible, as yet, to trace all. Most conspicuous now, perhaps, is Leonard Wood (M. D., '84), already a captain and Assistant Surgeon in 1898. At the outbreak of the war he became colonel of the 1st United States Volunteer Cavalry, "Rough Riders," and was with that body in its engagements about Santiago.

At the taking of the Ladrone Islands and the fall of Manila were Ammen Farenholt (M. D., '93); Dudley N. Carpenter (M. D., '96); and Chauncey Rea Burr (M. D., '88), with Dewey's fleet. Farenholt served in the convoy of the first fleet of transports to Manila.

In the Santiago campaign was Samuel Q. Robinson (M. D., '76), who had reached the rank of major. He landed with the first troops before Santiago, and had charge of the Field Hospital of the 5th Army Corps, as well as the United States Army General Hospital. Robinson was recommended for brevet by General Kent, on account of coolness in action in the attack of July 1, 1898.

Francis T. L. Magurn (M. D., '95), Major and Surgeon in the 9th Massachusetts Volunteers, was also at the taking of Santiago.

William H. Devine (M. D., '83) was Major and Surgeon in the 9th Massachusetts Volunteers and Major and Surgeon of United States Volunteers at Camp Alger, Va., and Camp Mead, Pennsylvania.

Otis H. Marion (M. D., '78) was Major and Surgeon in the 6th Massachusetts in the same Army Corps (2nd) at Camp Alger, while

Francis P. T. Logan (M. D., '97) was with the 8th Massachusetts in the First Division Hospital located at Chickamauga, at Lexington, and in Cuba.

William Cogswell (M. D., '94) was Major and Surgeon of the 8th Massachusetts from May 11, '98, until mustered out in '99.

Edwin F. Gardner (M. D., '75), who had been a private in the Civil War, entered the service as Surgeon in 1876. In the early part of the Spanish War he served in Arizona, and later as Major and Chief Surgeon of the 3rd Division at Atlanta. He continued in the army through the Philippine campaigns after the Spanish War.

William A. Rolfe (M. D., '90) and

David J. Johnson (M. D., '97) were Surgeon and Assistant Surgeon of the 1st Massachusetts Heavy Artillery and United States Army respectively, both located at Fort Warren and vicinity during the war.

Frank E. Bateman and Frederick W. Pearl both were graduated in the class of 1894 and served together in the 5th Massachusetts Volunteers. Pearl became Major and Surgeon before the close of the war.

William E. McPherson (M. D., '91) entered this same regiment as Hospital Steward, and was made Assistant Surgeon after Bateman was injured.

Charles E. Donlan (M. D., '98) went out with the United States Hospital Ship soon after his graduation, and served in the 7th Army Corps at Santiago and Havana. He had charge of the General Operating Hospital at Havana, besides serving with the 6th Regiment of Missouri Volunteers as their regimental surgeon.

Others attached to camp hospitals were Rowland R. Robinson (M. D., '88) at Camp Alger with the 1st Rhode Island Infantry.

Weston P. Chamberlain (M. D., '97) at the General Hos-

pital, Fortress Monroe, and at Luzon, P. I. Chamberlain was on the U. S. S. "Relief," and had the exceptional honor of receiving a vote of thanks from officers and privates for the excellent service in transportation.

Allen Greenwood (M. D., '89) at Ponce, P. R.

Timothy F. Goulding (M. D., '96) at Camp Wykoff, Fort Mead and in Cuba.

Henry Alden Shaw (M. D., '90) at Chickamauga and Key West.

Lewis M. Walker (M. D., '91) at the Josiah Simpson General Hospital, Fortress Monroe.

Timothy Leary (M. D., '95) was appointed Assistant Surgeon in August, '98, and

Fletcher G. Sanborn (M. D., 1900) was a private in the Hospital Corps at Tampa, and at Fort McPherson, Ga.

Cornelius J. McGillicuddy (M. D., '96) was with the 9th Massachusetts at Camp Dewey and Camp Alger.

John D. Yost (M. D., '98) was Assistant Surgeon in the 8th California Infantry.

Of the class of 1896 at the Medical School, Frederic A. Washburn, Jr., served on the "Yale," and Joseph J. Curry was at Fort Myer, Va., where he was appointed Pathologist and Bacteriologist, an appointment which proved to be a most important one. Washburn was the first American to enter Aracebo after the declaration of war. This he did under a flag of truce to visit the hospitals.

Henry A. Webber (M. D., '96) was 1st Lieutenant and Assistant Surgeon United States Army, and

Herman L. Chase (M. D., '87) was Acting Assistant Surgeon United States Army, assigned to the 20th Regiment United States Infantry.

Among the United States Volunteers were Charles C. Foster (M. D., '83), Major and Surgeon 5th Regiment, Massachusetts Infantry.

William S. Bryant (M. D., '88), 1st Lieutenant and Assistant Surgeon 1st Regiment Massachusetts Heavy Artillery. Promoted to Brigade Surgeon United States Volunteers.

George F. Dow (M. D., '96), 1st Lieutenant and Assistant Surgeon 6th Regiment Massachusetts Infantry, and

Thomas L. Jenkins (M. D., '90), 1st Lieutenant and Assistant Surgeon 8th Regiment Massachusetts Infantry.

In the navy, Harvard Medical representatives were: Charles N. Barney, M. D., '95, ensign on the U. S. S. "Scandia."

Richard F. O'Neil (M. D., '97), on "Catskill," doing coast defense duty.

John F. Urie (M. D., '88), on "Topeka."

Frank C. Cook (M. D., '93), on "Wilmington."

Richard E. Edes (M. D., '95), on "Celtic," and

George F. Freeman (M. D., '96), on "Eagle," all engaged in blockade duty before Santiago.

Eugene P. Stone (M. D., '84) was with the Pacific Squadron on the "Bennington," while

John W. Baker (M. D., '81) was on the Great Lakes in the "Michigan."

Gardner W. Allen (M. D., '82) was Passed Assistant Surgeon in the United States Navy during the war.

James H. Payne, Jr. (M. D., '89) was Assistant Surgeon United States Navy.

In the foregoing pages are recorded those only who are alumni of the School, graduates in course. There are many others, however, who had been at one time or another students in the School, but had not been graduated. Here is a record of their service; the men are arranged chronologically in an appendix, according to the year in which they were connected with the School:

APPENDIX TO CHAPTER XXXII.

1830. CALVIN CUTTER. Surgeon 21st Mass. Vols. 21 Aug., 1861. Wounded at second Bull Run, Va., and Fredericksburg; prisoner at Bull Run; during most of his service Surgeon-in-Chief 9th A. C. Resigned 7 May, 1864.

1838. HENRY WHEATON RIVERS. Asst. Surgeon 1st R. I. Detached Mil. 18 April, 1861. Surgeon 1st R. I. detached Mil. 7 June, 1861. Surgeon 4th R. I. Vols. 27 Aug., 1861. Brig. Surgeon 3d Brig., Dept. N. C., 8 March, 1862; Surgeon 3d Div., Dept. N. C., 25 July, 1862; Med. Dir. army for defences of Harper's Ferry, Va., 13 Oct., 1862; Surgeon, Headquarters, Dept. of the Ohio, 25 March, 1863; Med. Inap. 3d Div., 9th A. C., 1 July, 1863; Surgeon-in-Chief, Kautz's Cav. Div., 1 May, 1864; battles Manassas Plain, N. C., Roanoke Island, Newburn, Fort Macon, South Mountain, Md., Antietam, Fredericksburg, Va., Stoney Creek, Reams's Station, Malvern Hill, and Quaker Roads. Mustered out 27 Aug., 1864. Died at Providence, R. I., 3 Dec., 1868.

1840. ELI WHITNEY BLAKE. Act. Asst. Surgeon U. S. A. 4 Sept., 1863. On duty at Post Hosp. for recruits, New Haven, Conn. Resigned 15 March, 1866. Died at New Haven, Conn., 19 Nov., 1874.

1841. JAMES HOLLAND. Surgeon 1st Mass. Cal. 14 Sept., 1861. Resigned 26 June, 1863.

1844. WILLIAM COGSWELL. Surgeon 50th Mass. V. M. 16 Aug., 1862. Mustered out 24 Aug., 1863.

1845. SAMUEL FRANKLIN COUES. Asst. Surgeon U. S. N. 25 Feb., 1851. U. S. S. S. Saginaw 1861. Surgeon U. S. N. 26 April, 1861. U. S. Sloop Hoosatonic, Western Gulf Squad., 1862; Southern Atlantic Blockading Squad., 1863; U. S. Sloop Saranac, Pacific Squad., 1864-65; Naval Hosp. Chelsea, Mass., 1866-68. Captain and Med. Director U. S. N. 13 Aug., 1876. U. S. S. Richmond, European Squad.; Navy Yard, Portsmouth, N. H.; U. S. S. Colorado, Northern Atlantic Squad.; Fleet Surg. Northern Atlantic Squad.; Med. Dir. in charge U. S. N. Hosp., New York. Commander and Med. Director U. S. N. 3 March, 1871. In charge U. S. N. Laboratory, New York; Pres. Nav. Med. Exam. Board, Philadelphia; Med. Dir. in charge U. S. N. Hosp., Chelsea, Mass., 1885.

1846. PETER PINEO. Vol. Asst. to Surgeon General of Mass., and examined first recruits mustered in the State. Surgeon 9th Mass. Vols. 11 June, 1861. Brigade Surgeon U. S. Vols. 3, Aug., 1861. Staff of Gen. Wadsworth, between Washington, D. C., and Centreville, Va.; staff of Gen. King, 1862, as Med. Dir. 1st Div. 1st A. C.; advance on Fredericksburg; Act. Med. Dir. McDowell's Corps; battles from Cedar Mountain to second Bull Run; Med. Dir. 1st A. C.; battles South Mountain, Md.,

and Antietam; staff Gen. Meade; in charge Douglass U. S. Gen. Hosp., Washington, D. C., Nov. Lieut. Col. and Med. Insp. U. S. A. Feb., 1863. Ordered to La.; Med. Insp. Dept. of Gulf on staff of Gen. Banks; siege of Port Hudson, La.; returned North on account of illness, Sept.; Dept. of the South as Med. Insp., Gen. Gilmore's command, Nov.; Med. Insp. Army of Va. and N. C., with headquarters at Norfolk, Va., July, 1864, including charge of Hosp. of six thousand beds at Fort Monroe. Resigned Nov., 1865.

1847. H. L. BARTHOLOMEW.

1847. GEORGE JEWETT. Asst. Surgeon 10th Mass. Vols. 21 Jan., 1862. On duty near Washington, D. C., and in the Peninsula; siege of Yorktown, Va.; in charge Hosp. transport Arrowsmith; taken prisoner at battle of Malvern Hill, 1 July, 1862, while in charge of wounded; paroled and returned with wounded within Union lines. Surgeon 51st Mass. V. M. 30 Nov., 1862. Dept. of N. C.; Post Surgeon Beaufort, S. C. Mustered out 27 July, 1863.

1847. CHARLES GILMAN SMITH. Act. Asst. Surgeon U. S. A. July, 1862. On duty at Camp Douglass Hosp.; as Act. Surgeon 16th Inf. U. S. A.; and in Hosp. transport service on the Mississippi river. Discharged Dec., 1862.

1847. CHARLES TUFTS CHASE. Surg. 13th N. Y. Oct. 27, 1859. Left with Regt. for Annapolis, Md., April 18, 1861, ordered to Baltimore June 12, remaining until mustered out Aug. 6. In same Regt. ordered to Suffolk, Va., May 28, 1862, stationed along line of Dismal Swamp Canal and railroad from Petersburg, Va., to Weldon, S. C., under Gen. McClellan, and afterwards at Fortress Monroe; ordered home Sept. 5, 1862. Died at Brooklyn, N. Y., Nov. 8, 1864.

1848. ALEXANDER REED HOLMES. Surgeon 3d Mass. V. M. 16 April, 1861. Mustered out 24 Dec., 1862.

1848. THOMAS HAMMOND TALBOT. Lieut. Colonel 18th Me. Vols.

1848. JONATHAN COOLIDGE STONE. Surgeon in War. Died at West Farms, N. H., April 6, 1868.

1849. JOHN HOWELL MACKIE. Act. Asst. Surgeon U. S. N. 10 May, 1861. In U. S. S. Massachusetts, W. Gulf Blockading Squad.; in many engagements in Gulf of Mexico; slightly wounded by shell in engagement with rebel Steamer Florida; Post Surgeon, Ship Island, Miss., while occupied by naval and marine forces. Resigned 1 March, 1862. Act. Asst. Surgeon U. S. A. 1 April, 1863. In charge of U. S. A. Hosp., New Bedford, Mass. Resigned 24 July, 1865.

1850. FAYETTE CLAPP. Surgeon staff of Gen. Fremont, Nov., 1861. Act. Surgeon 5th Ohio Baty.; Fremont's camp in Mo.; Regimental Surgeon, Dec., 1861; ordered to Jefferson, Mo.; Fourth Street Hosp., St. Louis. Resigned Oct., 1862. Act. Asst. Surgeon U. S. N. 29 Nov., 1862.

U. S. S. Marmora, Dec., 1862; U. S. S. Benton; blockade at Vicksburg, Miss. Resigned June, 1864.

1850. JOSHUA BARRETT HOLDEN. Act. Asst. Surgeon U. S. A. Jan. 24, 1865. On duty at Fort Jefferson, Fla., till April, 1867; also Act. Asst. Surgeon on duty at Fortress Monroe, Va., Sept. 25, 1867, to Aug. 1, 1869. Died March, 1888.

1850. FRANCIS JAMES GOULD. Probably in Union Army, as he was Surgeon of a G. A. R. post; died of yellow fever at Jacksonville, Fla., Sept. 21, 1888. Medical School.

1850. CHARLES CARROLL BOMBAUGH. A. M., 1855. (M. D. Jefferson Med. Col., Pa., 1853.) Surgeon 2d Regt. Philadelphia Brig. 19 Aug., 1861. Surgeon 69th Penn. Vols. 29 Oct., 1861. Served near Chain Bridge, Va.; Monocacy River, Md.; at Winchester, Va., and in the Peninsular campaign; after McClellan's retreat to the James River taken ill with typho-malarial fever and sent home 21 July, 1862. Resigned 27 Sept., 1862. Act. Asst. Surgeon U. S. A. On duty at Mower Hosp., Chestnut Hill, and at Christian Street Hosp., Philadelphia, Pa., till 4 April, 1864; Newton University Hosp., Baltimore, Md. Resigned 31 May, 1865.

1851. GEORGE PIERCE SPRAGUE, M. D. Act. Asst. Surgeon U. S. A. Hosp. at Hampton, Va.

1852. SAMUEL HUTCHINS HURD. Surgeon 5th Mass. V. M. 1 May, 1861. With Regt. during its service near Washington, D. C.; first battle Bull Run, Va. Mustered out 31 July, 1861.

1853. RICE PITKIN BOLTWOOD. Was in Union army. After War settled in Newbern, N. C., where died 1870.

1854. DANA WARREN HALSTORN, M. D. Surgeon U. S. Vols. Sept. 4, 1861. Med. Dir. in Gen. Sherman's command. Asst. Med. Dir. in Gen. Grant's command. Resigned Jan. 8, 1865.

1854. FOSTER SWIFT. Surgeon 8th N. Y. Vols. 31 Dec., 1861. Prisoner at Bull Run, Va.; 1861; soon paroled and returned to New York; in practice of medicine at New York for several years; went to Mentone, France, for his health; returned and settled at Geneva, N. Y. Died at Santa Cruz, W. I., 10 May, 1875.

1854. HORATIO SPRAGUE SOULE. Asst. Surgeon 56th Mass. Vols. 30 Nov., 1863. Joined Army of the Potomac; battles Wilderness, Va.; Spottsylvania; North Anna; Totopotomy; Bethesda Church; Cold Harbor; siege of Petersburg; battles Weldon R. R.; Poplar Spring Church; Hatcher's Run; Petersburg. Mustered out 12 July, 1865.

1854. HENRY PUTNAM STEARNS. Surgeon 1st Conn. Vols. 18 April, 1861. Battle first Bull Run, Va. Brigade Surgeon U. S. Vols. Ordered to report to Gen. Fremont in Mo.; then to Gen. Grant in command S. W. Dist. of Mo.; battle Belmont, Mo.; Med Dir. right wing of army under Gen. McClernand; battles Fort Henry, Tenn.; Fort Donelson;

Pittsburg Landing; on sick leave for forty-five days; on duty in office of Asst. Surgeon General U. S. A. as Insp. of Hosps. at St. Louis, Mo., for some months; Med. Dir. U. S. Gen. Hosps. northern Div., Army of the Miss., with headquarters at Paducah, Ky.; engaged in building Holt Gen. Hosp. at Jeffersonville, Ind., spring of 1864; ordered to Nashville, Tenn., in fall of 1864, as Med. Dir. of U. S. Gen. Hosps. in and about Nashville, once a prisoner, soon afterward escaped. Bvt. Lieut.-Col. U. S. Vols. 22 Aug., 1865. Resigned 25 Aug., 1865.

1856. EDWARD SWIFT DUNSTER. Asst. Surgeon U. S. A. 5 Aug., 1861. Ordered to report to Gen. McClellan near Rich Mountain, W. Va.; in charge of Hosps. for Union and Confederate troops at Beverly, organized Hosp. at Grafton, and Petersburg, using for the first time in this country the system of ridge ventilation; Med. Insp. for southern half of the Dept.; appointed Med. Dir. of Hosp. transports, and had charge of transportation of sick and wounded from Army of the Potomac, previous to McClellan's move to the James River and those from the Seven Days' battles, from Harrison's Landing, Va., to the number of twelve thousand; in charge of Turner's Lane Hosp., Philadelphia, Pa., during winter and spring of 1862-63; member of board for examination of candidates for the Med. Dept. of the U. S. Army; transferred to Washington, D. C., as Asst. to Surgeon General in spring of 1863; at U. S. Military Academy, West Point, N. Y., 17 Nov., 1863, 22 Dec., 1865. Bvt. Captain and Bvt. Major 13 March, 1865. Resigned 1 Feb., 1866.

1856. HENRY MARTYN SAVILLE. Surgeon 4th Mass. V. M. 16 April, 1861. Mustered out 22 July, 1861. In practice of medicine in Boston, Mass.; removed to New York. Died in New York, 11 Jan., 1881.

1857. GEORGE HOLMES BIXBY. Act. Asst. Surgeon U. S. N. May, 1861. In Miss. Squad, in all naval battles from Memphis, Tenn., to Vicksburg, Miss.; U. S. Naval Hosp. Ship Red Rover. Resigned 24 Sept., 1865.

1857. JAMES GERRITT BRADT. Left College 19 Oct., 1854. Asst. Surgeon 26th Mass. Vols. 10 Sept., 1861. With Regt. to Ship Island, Miss., Nov., and New Orleans, La. Surgeon 26th Mass. Vols. 14 July, 1862. In service in La. in 1862-63; battle La Fourche Crossing; in Dept. of Va. in 1864; battles Winchester; Fisher's Hill; Cedar Creek. Mustered out 7 Nov., 1864. Died at Lowell, Mass., 22 Jan., 1868.

1857. SAMUEL KNAPP TOWLE. Asst. Surgeon 14th Mass. Vols. (1st Mass. H. A.) 5 July, 1861. Surgeon 30th Mass. Vols. 28 Feb., 1862. Took part with Regt. on Lower Miss. River; capture of New Orleans, La.; attempt on Vicksburg, Miss.; battles Baton Rouge, La.; established Gen. Hosps., Carrollton, and at old U. S. barracks below New Orleans; in charge U. S. A. Gen. Hosp. Baton Rouge, spring of 1863; transferred to Gen. Sheridan's command in W. Va., July, 1864; in charge field Hosp.

1st Div. 19th A. C.; campaign Shenandoah Valley. Mustered out 3 March, 1865.

1857. GEORGE THOMAS PERKINS. Hosp. Steward 22d Mass. Vols. 24 Sept., 1861. Wounded at battle of Gaines's Mills, Va., 26 June, 1862; prisoner, 29 June, at Savage's Station; released 1 Aug. Asst. Surgeon 22d Mass. Vols. 20 Feb., 1863. Act. Surgeon-in-Chief, Art. Brig. 5th A. C. Asst. Surgeon 32d Mass. Vols. 17 Oct., 1864. Surgeon 26th Mass. Vols. 21 Dec., 1864. Act. Med. Insp., City of Savannah. Mustered out 25 Sept., 1865. Battles Yorktown, Va.; Hanover, C. H.; Mechanicsville; Gaines's Mills; Groveton; Fredericksburg; Chancellorsville; Middleburg; Gettysburg, Pa.; Rappahannock Station, Va.; Mine Run; Wilderness; Laurel Hill; Spottsylvania; Jericho Ford; Little River; Totopotomy; Bethesda Church; Shady Grove Church; Petersburg; siege of Petersburg; Weldon R. R.; Cold Harbor. Practiced his profession at Newton Lower Falls, Mass., for five years from Dec., 1865; removed to Boston; went to Europe in 1876, and again 1877; Asst. Surgeon Baty. B., Mass. Light Art., 29 Aug., 1870; Surgeon 1st Mass. V. M. 10 Jan., 1873; discharged, 28 April, 1876; Surgeon 7th Mass. V. M., 28 May, 1877. Died at Boston, Mass., 7 Dec., 1880.

1857. JOHN HILL MERRILL. Asst. Surgeon 1st R. I. Light Art. 25 Aug., 1862. Joined Army of the Potomac at Harper's Ferry, Va.; Camp Barry (Camp of Art. Instruction), Washington, D. C.; defences of Washington, Feb., 1863. Surgeon 1st R. I. Light Art 6 April, 1863. Surgeon-in-Chief, Art. Brig. 2d A. C. Resigned 16 April, 1864.

1857. JACOB FARNUM HOLT. Act. Asst. Surgeon U. S. A. 6 July, 1862. On duty in Hosps. in Philadelphia, Pa.; at Camp William, Chelton Hills, and at Summit House Hosp., near Darby. Resigned 12 Oct., 1864.

1858. SAMUEL HENRY EELLS. Hosp. Steward 12th Mich. Vols. 7 Feb., 1862. Battle Shiloh, Tenn.; taken prisoner while in charge of wounded men; exchanged; battle Hatchie; attached to Gen. McClernand's Div. of the Reserve, and employed in guard duty at various points on the railroad lines, chiefly at Bolivar; siege of Vicksburg, Miss.; expeditions to the Big Black River and into Ark. Asst. Surgeon 12th Mich. Vols. 1 Feb., 1863. Battle Middleburg, Tenn. Died at Detroit, Mich., 31 Jan., 1864.

1858. WILLIAM SNOW DYER. Act. Asst. Surgeon U. S. A. Aug., 1861. Benton Barracks, St. Louis, Mo.; in charge U. S. A. Gen. Hosp., St. Louis. Discharged, 1864. Died at Chicago, Ill., 14 Aug., 1882.

1858. JOHN OTIS BURT. Asst. Surgeon U. S. N. 30 July, 1861. U. S. S. Colorado; ordered to U. S. S. Conestoga, of the Mississippi Squad., Sept., 1862. Resigned 23 Nov., 1863.

1858. JONATHAN LONGFELLOW CILLEY. Hosp. Steward 13th Ohio Vols. 10 May, 1864. Stationed at Fort McHenry, Baltimore, Md.,

till 18 Aug., 1864. Act. Master's Mate U. S. N. 31 Aug., 1864. Mississippi Squad. Resigned 8 Nov., 1864.

1859. ALFRED FAIRBANKS HOLT. Private 3d Mass. V. M. 17 April, 1861. In service at Fort Monroe, Va.; Hosp. Steward; Asst. Surgeon Eastern Bay State Regt., Nov., 1861; not mustered. Asst. Surgeon 30th Mass. Vols. 20 Feb., 1862. Battle Baton Rouge, La.; siege of Port Hudson; battle Carrion Crow Bayou. Surgeon 1st Texas Cav., 28 Nov., 1862. Major 1st Texas Cav., 11 Jan., 1864. Lieut. Colonel 1st Texas Cav., 19 May, 1865. Mustered out 28 Nov., 1865.

1859. EDWARD CURTIS. Med. Cadet U. S. A. 6 Sept., 1861. Assigned to duty at Union Gen. Hosp., Georgetown, D. C.; transferred to Cliffburne Barracks, 5 May, 1862; ordered for temporary duty to headquarters Army of Va., 22 Aug., Satterlee Hosp., West Philadelphia, Pa., 29 Aug., reappointed Med. Cadet, 6 Sept. Discharged 4 May, 1863. Act. Asst. Surgeon U. S. A. 5 May, 1863. Assigned to duty at Surgeon Generals Office, U. S. A., to superintend the miscroscopical Dept. of the Army Medical Museum. Asst. Surgeon U. S. A. 30 March, 1864. On temporary duty at depot Hosps., White House, Va., 6 June; Consulting and Operating Surgeon, Hampton, Va., Gen. Hosp. 22 June; returned to Surgeon Generals Office, 7 Aug.; Executive Officer, Sheridan Field Hosp., Winchester, Va., 20 Sept.; relieved and returned to former post, 28 Oct. Bvt. Captain U. S. A. 13 March, 1865. Bvt. Major U. S. A. 13 March, 1865. Resigned 7 June, 1870.

1859. JOHN WINSLOW. Act. Med. Cadet U. S. A. Sept., 1862. Union Hotel Hosp., Georgetown, D. C. Act. Asst. Surgeon U. S. A. March, 1863. Mount Pleasant Gen. Hosp., Washington, March, 1863, July, 1865. Discharged July, 1865.

1859. GEORGE AUGUSTUS WHEELER. Surgeon 18th Me. Vols., afterwards 1st H. A. Defences of Washington, D. C. Asst. Surgeon U. S. Vols, Oct., 1862. Ordered to report at U. S. Naval Acad., Annapolis, Md.; in charge Hosp. at Annapolis Junction. Surgeon U. S. Vols. 5 April, 1864. Ordered to the field; in charge Depot Field Hosp. 9th A. C. at City Point, Va., for ten weeks; Asst. Med. Dir. and Insp. Hosps. 9th A. C. until close of War; on duty in Jeffersonville, Ind. Bvt. Lieut. Col. U. S. Vols. 20 March, 1865.

1859. AUGUSTINE ALVAN MANN. Asst. Surgeon 1st R. I. Cav. 7 June, 1862. Joined Regt. at Manassas Junction, Va.; on duty in Western Va.; prisoner at Middleburg, Va.; confined in Libby Prison, Richmond, till 24 Nov., 1863; rejoined Regt., Feb., 1864; on detached duty with 5th Cav. U. S. A., at Brig. Gen. Merritts Headquarters. Mustered out 18 Nov., 1864. Battles Cedar Mountain, Va.; Grovetown; second Bull Run; Chantilly; Middleburg; Deep Bottom; Berryville; Opequan; Woodstock; Cedar Creek.

1859. ALEXANDER HUTCHINS. Asst. Surgeon U. S. N. 30 July,

1861. Served in Brooklyn, N. Y.; U. S. S. Wyandotte; U. S. S. Harriet Lane; U. S. S. Massachusetts, supply ship to Atlantic Squad. Resigned 24 June, 1863.

1859. WILLIAM HENRY PALMER. Surgeon 3d N. Y. Cav. 28 Aug., 1861. On duty with 9th Corps Army of Va. and N. C., Army of the James, and Army of the Potomac; with Gen. Banks in Shenandoah Valley; in service in N. C. and Eastern Va., 1862-63; about Petersburg and on the James River, 1864. Mustered out 27 Aug., 1864. Act. Staff Surgeon U. S. A. 14 April, 1865. In charge U. S. A. Gen. Hosp. at Richmond, Va. Discharged 27 Aug., 1865. Act. Asst. Surgeon U. S. A. 9 Sept., 1865. In charge Freedmens Hosp., Richmond, Gordonsville Chancellorsville, Point of Rocks, Orange C. H., and Culpeper C. H. Discharged 10 Sept., 1866.

1859. HORATIO PAINE. While a student in medicine, in connection with Drs. Mott and Van Buren of New York, was instrumental in inducing Congress to create the grade of Med. Cadet U. S. A.; the bill was passed 3 Aug., 1861. Med. Cadet U. S. A. 3 Aug., 1861. Assigned to duty as Asst. to Surgeon of 16th N. Y. Vols., who was also Chief Surgeon of his Brig.; present with the reserve at first battle of Bull Run, Va.; on duty at Gen. Hosp. Alexandria, Nov., 1861; ordered to Army of the Potomac at White House, May, 1862; on U. S. A. Hosp. Steamer Commodore. Act. Asst. Surgeon U. S. A. 3 Aug., 1862. Again ordered to same steamer, and soon after put in charge; Gen. Hosp., Frederick, Md., Sept., 1862; Gen. Hosp., Harpers Ferry, April, 1863; on temporary duty with 151st N. Y. Vols. June. Resigned 3 Aug., 1863. Took his degree of M. D. (Univ. Pa.) and again appointed Act. Asst. Surgeon U. S. A. May, 1864. Sent to Lincoln Gen. Hosp., Washington, D. C.; in charge of Barrack Branch Hosp., containing five hundred beds; Whitehall Gen. Hosp., near Bristol, Pa., where he was made executive officer. Resigned 15 Aug., 1865. Died in England, 1 May, 1882.

1859. HENRY MARTYN WELLS. Asst. Surgeon U. S. N. 30 July, 1861. Naval Rendezvous and Hosp., Boston, Mass., 1861; Sloop Portsmouth and St. Tennessee, W. Gulf Blockading Squad., 1861-63; engagements with Forts Jackson and St. Philip, April, 1862; batteries Donaldsonville, La., Grand Gulf, Port Hudson and Vicksburg, Miss., 1862-63; receiving ship and Hosp. at Boston, Mass., 1864; Frigate Sabine, 1864; Ironclad Onondaga, N. A. Blockading Squad.; batteries on James river, Va., 1865; Navy Yard, Washington, D. C., and St. Shamokin, Brazil Squad., 1866-68. Surgeon U. S. N. 9 Oct., 1866. Naval Hosp., New York, 1869-70.

1860. FRANCIS FREDERIC BROWN. Asst. Surgeon 48th Mass. V. M. 8 Dec., 1862. Served with Regt. in La., at Baton Rouge and Port Hudson. Mustered out 3 Sept., 1863.

1860. PTOLEMY O'MEARA EDSON. Asst. Surgeon 1st Vt. Cav.

5 Nov., 1861. Surgeon 17th Vt. Vols. 16 March, 1864. Battles Winchester, Va.; Cedar Mountain; second Bull Run; Chantilly; Gettysburg, Pa.; Brandy Station, Va.; Wilderness; Spottsylvania; North Anna; Cold Harbor; siege of Petersburg; Poplar Grove Church. Resigned 27 Feb., 1865.

1860. GEORGE GILL WHEELOCK. Volunteer Surgeon in Scott's Life Guards. 4th N. Y. S. M.; in Va. and Md., June-July, 1861; Volunteer Surgeon in transports of U. S. San. Com., April-May, 1862. Act. Asst. Surgeon U. S. A., 13 Jan., 1865. Served in Savannah, Ga., becoming Exec. Off. at U. S. A. Gen. Hosp., one thousand beds. Resigned 8 July, 1865.

1860. FREDERIC WILLIAM STOWE. Private 1st Mass. Vols. 1861. Corporal, May, 1861; first battle Bull Run, Va. Second Lieut. 14th Mass. Vols. 18 Feb., 1862. Captain and A. A. G. U. S. Vols. 27 Jan., 1863. Staff of Brig. Gen. Von Steinwehr, 11th A. C.; battles Chancellorsville, Va.; Gettysburg, Pa., where he was wounded; at home on sick leave; battle Lookout Mountain, Tenn.; again on sick leave; reported to Brig. Gen. Morrell, Com. Dept. for Drafted Men, Indianapolis, Ind., where he remained till summer of 1864. Resigned Aug., 1864. Private 1st Light Baty. 14 Oct., 1864. Bvt. Second Lieut. U. S. Vols. 12 June, 1865. Discharged 14 June, 1865. Died in California.

1860. GEORGE BAXTER POMEROY. Med. Cadet U. S. A. Wood Hosp. Asst. Surgeon 110th Pa. Vols. 14 March, 1863. Surgeon 162d Pa. Vols. (17th Pa. Cav.) 21 April, 1864. Surgeon-in-Chief 2d Brig. 1st Div. Cav. Corps; wounded at Chancellorsville, Va. Mustered out 28 June, 1865.

1860. ADONIRAM B. JUDSON. Asst. Surgeon U. S. N. 30 July, 1861. Passed Asst. Surgeon U. S. N. 22 July, 1864. On duty at Washington, D. C.; on Porter's fleet of mortar schooners; U. S. S. New Ironsides; U. S. Monitor Nantucket; Hosp. at Boston, Mass.; on U. S. Frigate Potomac at Pensacola, Fla., Navy Yard; on U. S. S. Muscoota and U. S. S. Michigan; in action below New Orleans, La.; at Vicksburg, Miss.; and off Charleston, S. C. Surgeon U. S N. 26 Dec., 1866. Resigned 11 May, 1868.

1860. FRANK WILLIAM LAWRENCE. Left College July, 1857. On duty as Surgeon on the Sea Islands, S. C., Feb., 1862, appointed by the Educational Commission. Act. Asst. Surgeon U. S. A. fall of 1862. Stationed at St. Helena Island.

1860. CHARLES JEWETT WOOD. Left school 1860. Hosp. Steward 42d Mass. Vols. Oct. 14, 1862. Mustered out Aug. 20, 1863. Died 1880.

NATHANIEL BOWDITCH. (Pupil.) 2d Lieut. 1st Mass. Cav. Nov. 5, 1861. Aide de camp to Gen. Williams in expedition against Charleston, S. C., 1st Lieut. and Adjt. March, 1863. Act. Asst. Adjt. 1st Brig. 2d Div. Army of the Potomac. Battles Pope's

retreat and those of Army of Potomac up to Kelly's Ford, Va., March 16, 1863, where he was wounded while leading a cavalry charge. Died in the camp, March 18, 1863. Brig. Gen. of his Regt. wrote "His conduct in battle was that of a brave, gallant gentleman, and accomplished soldier. Had our government enough of such officers the way to peace would be shortened."

1861. JOHN H. McGREGOR. Hosp. Steward 24th Mass. Vols. 2 Sept., 1861. Asst. Surgeon 12th Mass. Vols. 15 Aug., 1862. Resigned 2 Sept., 1863. Asst. Surgeon 32d Mass. Vols. 2 March, 1865. Mustered out 29 June, 1865.

1861. FREDERIC WENTWORTH MERCER. Asst. Surgeon 47th Mass. V. M. 7 Nov., 1862. Mustered out 1 Sept., 1863. Surgeon 1st Batt. Frontier Cav. (attached to 26th N. Y. Vol. Cav.), Jan., 1865. Mustered out 30 June, 1865.

1861. EZRA PRAY. Act. Asst. Surgeon U. S. N. 21 Oct., 1861. North and South Atlantic, and West Gulf Squad., on U. S. S. Fernandina, Cambridge, State of George, Bainbridge, Wabash, Augusta, Dinsmore, and Arkansas. Act. Passed Asst. Surgeon U. S. N. 4 Aug., 1865. Discharged 6 March, 1866.

1861. CARLETON ATWOOD SHURTLEFF. Med. Cadet U. S. A. 29 March, 1863. Ordered to duty with army of Gen. Grant near Vicksburg, Miss.; assigned to duty in floating Hosp. Nashville at Milliken's Bend, Miss. River; at home on sick leave, 15 June; ordered to Harrisburg, Pa.; on duty at Cotton Factory Hosp., 20 July, till sent to Turner's Lane Hosp., Philadelphia, 26 Oct., 1863. Mustered out 29 March, 1864. Returned to Boston, Mass., and continued the study of medicine. Died at Brookline, Mass., 26 June, 1864.

1861. ISAAC SMITH. Asst. Surgeon 26th Mass. Vols. 2 Dec., 1862. Battles Lafourche Crossing, La.; Vermillion Bayou; Deep Bottom, Va.; Winchester, where he was wounded, 19 Sept., 1864. Mustered out 7 No., 1864.

1861. VERTULAN RICH STONE. Asst. Surgeon 19th Mass. Vols. 6 Nov., 1862. Resigned 11 May, 1863.

1862. GEORGE EDWIN PINKHAM. Asst. Surgeon 6th Mass. V. M. 23 Dec., 1862. Battles Deserted House, Va.; Cassville; siege of Suffolk. Mustered out 3 June, 1863. Asst. Surgeon 3d Mass. H. A. 6 March, 1865. Brig. Surgeon 2d Brig. 22d A. C. Resigned 16 Aug., 1865.

1861. EDWARD R. HUTCHINS. Private 1st Mass. Vols. 2 May, 1861. Med. Cadet U. S. A. 3 Aug., 1861. Discharged 31 Aug., 1862. Asst. Surgeon 11th N. H. Vols. 2 Sept., 1862. Battles second Bull Run, Va.; Fredericksburg. Mustered out 25 Dec., 1862. Act. Asst. Surgeon U. S. N. Jan., 1863. Attack on Fort Powell, Mobile Bay, Ala. Resigned 1 Dec., 1865.

1861. FRANK HASTINGS HAMILTON. Left College 9 May, 1859.

Private 6th N. Y. S. M. 26 April, 1861. Sergeant 31st N. Y. S. M. 1 May, 1861. Second Lieut. 16th N. Y. Vols. 22 Feb., 1862. Resigned on account of disability, 22 Sept., 1862. Act. Asst. Surgeon U. S. A. 9 March, 1863. Went to California in 1866 as bookkeeper in wholesale stationery and paper business. Died at San Francisco, Cal., 5 Nov., 1869.

1861. DANIEL DUDLEY GILBERT. Med. Cadet U. S. A. 27 March, 1862. On staff of Maj. Gen. Franklin as Asst. to Med. Dir., 6 July, 15 Sept.; battles second Bull Run, Va.; South Mountain, Md.; in Hosps. at Washington, D. C., Frederick, Md., and Alexandria, Va., till 11 Nov. Act. Asst. Surgeon U. S. N. 11 Nov., 1862. Asst. Surgeon U. S. N. 25 Jan., 1863. U. S. Naval Hosp., Chelsea, Mass., Jan.-July, 1863; U. S. S. Maratanza, N. A. Blockade Squad. off Wilmington, N. C. Resigned 16 Aug., 1864.

1861. FRANCIS HIGGINSON ATKINS, S. B. Private 44th Mass. V. M. 22 Aug., 1862. Mustered out 18 June, 1863. Act. Med. Cadet U. S. A. July, 1863. Judiciary Square Hosp., Washington, D. C. Med. Cadet U. S. A. 1 Jan., 1864. Discharged March, 1864. Act. Asst. Surgeon U. S. N. March, 1864. Farragut's Fleet, West Gulf Squad. Resigned 28 Nov., 1864.

1861. RICHARD CURRAN. Left school 1860. Private 33d N. Y. Vols. May 22, 1861. Hosp. Steward. Surgeon 33d N. Y. Vols. Aug. 15, 1862. Mustered out June 2, 1863.

1862. DAVID THAYER BUNKER. Private 4th Batt. Mass. V. M. Captain 33d Mass. Vols. 6 June, 1862. Served with Regt. in Va.; transferred with company to 41st Mass. Vols. Captain 41st Mass. Vols. (afterward 3d Mass. Cav.) 31 July, 1862. Attached to Bank's La. expedition; participated in thirty-five engagements. Major 3d Mass. Cav. 7 Aug., 1864. Mustered out 6 June, 1865.

1862. WILLIAM FLETCHER McNUTT. Act. Asst. Surgeon U. S. N. 24 Dec., 1862. Mississippi Squad; siege of Vicksburg, Miss.; Grand Gulf; Deer Creek, Red River expedition. Resigned 23 July, 1864.

1862. JEROME HENRY KIDDER. Private 10th Md. Vols. May, 1863. Corporal; Sergeant; battles Berryville, Va.; Falling Waters, Md.; at Patterson Park and Hicks Gen. Hosps. near Baltimore, as Vol. Cadet and Surgical Dresser, with warrant as Hosp. Steward. Mustered out Feb., 1864. Asst. Surgeon U. S. N. 18 June, 1866. Served at Naval Hosp., Philadelphia, Pa.; ordered to U. S. S. Idaho, 1 Oct., 1867; on Japan station; decoration from King of Portugal of the Order of Christ. Passed Asst. Surgeon U. S. N. 20 March, 1871. At Naval Hosp. and Naval Laboratory, New York; attached to Transit of Venus Expedition to Kerguelen Island as naturalist, June, 1873; special duty with U. S. Fish Commission, summer of 1875. Surgeon U. S. N. June, 1876. At Smithsonian Inst., Washington, D. C., preparing reports upon the Natural History of Kerguelen Island (Bulletins 2 and 3, Nat. Mus., 1876); ordered to U. S. S.

Alliance, Dec., 1876; on European station until Aug., 1878; special duty with U. S. Fish Com., summer of 1879; on duty at Navy Dept., Washington, as chemist and microscopist. Resigned 18 June, 1884.

1862. AZRO MELVIN PLANT. Asst. Surgeon 14th Vt. Vols. 29 Jan., 1863. Joined Regt. at Fairfax Station, Va.; Brigade Hosp., Fairfax C. H.; Emory Hosp., Washington, D. C. Mustered out 30 July, 1863. Act. Asst. Surgeon U. S. A. Emory and Lincoln Hosps., Washington, D. C., and in defences of Washington. Discharged 17 April, 1864.

1863. ARTHUR HENRY WILSON. Left school in 1862. Asst. Surgeon U. S. Vols. Asst. Surgeon 7th Veteran Vols. May 12, 1865. Discharged April 27, 1866. Died at South Boston May 11, 1890.

1863. WILLIAM BARROWS GROVER. Hosp. Steward 9th Maine Vols. Sept., 1862. Joined Regt. at Fernandina, Fla., Nov.; served with Regt. at Hilton Head, S. C.; in office of Chief Q. M. 10th Corps; expeditions against Charleston, S. C., via Morris Island. Med. Cadet U. S. A. Nov., 1863. On duty at Fort Independence, Boston Harbor, Mass., Mass. Gen. Hosp. and Beach Street Barracks, Boston. Discharged Nov., 1864.

1863. WILLIAM FURNESS JENKS. Private 32d Pa. V. M. June, 1863. Mustered out July, 1863. M. D. Univ. Pa., 1866; studied abroad in Berlin, Vienna, London and Edinburgh, giving special attention to obstetric medicine; in 1870 returned to Philadelphia, Pa., and engaged in the practice of medicine; organized the obstetrical Dept. of the Philadelphia Dispensary; Mem. Pathological and Ostetrical Societies, Philadelphia; Fellow Coll. Phys., Philadelphia; prepared course of lectures under the Mueller bequest; editor Am. Supp. Obstet. Journ. Great Britain and Ireland; Surgeon State Hosp. for Women. Died near Philadelphia, Pa., 31 Oct., 1881.

1863. BENJAMIN FRANKLIN STURGIS. Asst. Surgeon 19th Me. Vols. 23 April, 1864. Battles Wilderness, Va.; Spottsylvania; North Anna; Cold Harbor; in front of Petersburg; Weldon R. R.; Reames's Station. Discharged on account of disability 22 Oct., 1864.

1863. FREDERIC BARTLETT LAWSON. Act. Asst. Surgeon U. S. N. 16 Sept., 1862. Resigned 20 Nov., 1865.

1863. WILLIAM HENRY LATHROP. Private 44th Mass. V. M. 12 Sept., 1862. On duty with Regt. in N. C.; detailed as Commissary Steward. Mustered out 18 June, 1863. Commissary Steward Foster Gen. Hosp. in Newbern, N. C. Act. Med. Cadet U. S. A. 10 Aug., 1863, 10 Aug., 1864. Satterlee Gen. Hosp., Philadelphia, Pa. Act. Asst. Surgeon U. S. A. 16 March, 1865. Second Corps Hosp. Army of the Potomac. Asst. Surgeon 55th Mass. Vols. 14 June, 1865. Mustered out 29 Aug., 1865. Remained in S. C. as Act. Asst. Surgeon till discharged from service, Nov., 1866; a part of the time as quarantine officer, Port Royal, S. C.

1863. OLIVER HATCH WEBBER. Second Lieut. 43d Mass. V. M. 9 Sept., 1862. Battles Kinston, N. C.; Whitehall; Goldsboro; Act. Asst.

Surgeon to Regt.; in charge of transport to Washington. Mustered out 30 July, 1863.

1863. JOSEPH MASON. Hosp. Steward U. S. N. U. S. Euterpe. Act. Med. Cadet U. S. A. Mill Creek Hosp., Va., 1862. Died at Mill Creek near Fort Monroe, Va., 23 Sept., 1862.

1863. ELISHA MANN WHITE. Asst. Surgeon 37th Mass. Vols. 29 March, 1864. Surgeon 37th Mass. Vols. 21 Dec., 1864. Transferred to 20th Mass. Vols. 19 June, 1865. Mustered out as supernumerary, 22 June, 1865.

1863. ABRAHAM M. WILDER. Act. Asst. Surgeon U. S. A. April, 1862. At Corinth, Miss., and Pittsburg Landing, Tenn. Act. Asst. Surgeon U. S. A. 1 Oct., 1862. Harewood Hosp., Washington, D. C. Asst. Surgeon U. S. Vols. 11 March, 1863. U. S. Gen. Hosp., Madison, Ind. Surgeon U. S. Vols. 29 June, 1863. In charge of Hosp. at Madison; Chief Surgeon 2d Div. 9th A. C.; Med. Dir. 9th A. C.; Med. Insp. of Forces in E. Tenn.; present at all battles of 9th A. C.; Med. Dir. 23d A. C.; siege of Knoxville, Tenn.; organized Med. Dept. of Gen. Stoneman's Cav. Corps; Med. Insp. Army and Dept. of the Ohio; organized Med. Dept. and Ambulance Corps for Atlanta, Ga., campaign; Med. Dir. Dept. of the Ohio, winter of 1864-65; ordered to Fort Leavenworth, Kan., May, 1865. Bvt. Lieut. Colonel U. S. Vols. 15 Aug., 1865. Mustered out Sept., 1865.

1864. ALPHEUS SPRAGUE PACKARD. Asst. Surgeon 1st Me. Vet. Vols. Oct., 1864. Mustered out July, 1865.

1864. HORACE BINNEY HARE. Left College 30 Sept., 1861. Private Miller's Baty. Pa. V. M. 13 Sept., 1862. Sergeant. Mustered out 24 Sept., 1862. Engaged in the practice of medicine in Philadelphia, Pa., till June, 1874; sailed for Europe, and engaged in study in Leipzig, devoting himself especially to the study of medical chemistry; returned to Philadelphia in 1876, and resumed practice; Instruct. of Chem. Episc. Acad.; Prof. of Hygiene Auxil. Fac. of Med. Univ. of Pa., 6 Feb., 1877; Pathol. Chem. to Univ. Hosp., March, 1877; lecturer on Pathol. Chem., Univ. of Pa.; lecturer on Chem., Franklin Inst.; on a voyage to California, Australia, and the Pacific Coast, 1877; voyage to Mediterranean, 1878. Died at St. Thomas, W. I., 21 March, 1879.

1864. JOHN RANDOLPH HAM. Asst. Surgeon 115th U. S. C. T. Aug., 1864. Ordered to Louisville, Ky.; Act. Surgeon 114th U. S. C. T. 19 Aug., 10 Nov., 1864; rejoined Regt., sick in Hosp. in Lexington; rejoined Regt. 20 Dec., 1864, in Ky.; Med. Purveyor 25th A. C. 28 March, 1865; entered Richmond, Va., 3 April, 1865; ordered to Texas, 16 June, 1865; Post Surgeon and Med. Purveyor of Corps. Surgeon 115th U. S. C. T. 25 Oct., 1865. Mustered out 13 March, 1866.

1864. GEORGE FULLER GILL. Hosp. Steward R. I. Vols. 1862. Med. Cadet U. S. A. March, 1863. Act. Asst. Surgeon U. S. A. March, 1864. Discharged July, 1865.

1864. BENJAMIN COBURN.

1864. ELISHA PECKHAM CLARKE. Asst. Surgeon 31st Mass. Vols. 17 Feb., 1864. Battles Mansfield and Cane River, La.; Spanish Fort and Blakely, Ala.; prisoner one month at Alexandria, La. Mustered out 9 Sept., 1865.

1864. ALFRED EASTMAN EMERY. Act. Asst. Surgeon U. S. N. 26 March, 1863. First and second attacks on Fort Fisher, N. C.; siege of Vicksburg, Miss.; Hosp. ship Red Rover, Miss. Squad.; U. S. S. Keystone State, N. A. Squad. Mustered out 22 Feb., 1865.

1864. JOSEPH RUTTER DRAPER. Med. Cadet U. S. A. 1 May, 1863. Asst. Surgeon 14th R. I. Vols. (afterward 11th U. S. Colored H. A.) 11 Dec., 1863. Served in Texas and La. Mustered out 2 Oct., 1865. Returned to the practice of medicine at South Boston, Mass. Died at South Boston, Mass., 5 Aug., 1885.

1864. DANIEL COFFIN BURLEIGH. Asst. Surgeon U. S. N. 1864. Act. Passed Asst. Surgeon U. S. N., 1866. Resigned. Reappointed Act. Passed Asst. Surgeon U. S. N., 1879. Retired on account of disability.

1864. CHARLES BURR BRIDGHAM. Private 2d U. S. Sharpshooters, Nov., 1861. Hosp. Steward; prisoner at second Bull Run, Va.; paroled in one week. Asst. Surgeon 54th Mass. Vols. 1 May, 1863. Resigned 22 Feb., 1864. Recommissioned 4 May, 1864. Resigned 16 July, 1864. Battles Falmouth; Culpeper; Cedar Mountain; Rappahannock Station; Sulphur Springs; second Bull Run; Fort Wagner, S. C.; siege of Charleston; Florida campaign.

1865. GEORGE W. MASTERS, M. D. Act. Asst. Surgeon U. S. N. June, 1862. Honorably discharged 10 Oct., 1865.

1865. HERMAN JOSEPH SMITH. Asst. Surgeon 5th U. S. C. Cav., 8 Oct., 1864. In service in Ky., Tenn., and Ark. Discharged 16 March, 1866.

1865. ALBERT RAYMOND RICE. Asst. Surgeon 49th Mass. V. M. 3 Dec., 1862. Mustered out 1 Sept., 1863.

1865. GEORGE ALBERT MONRO.

1865. AMASA ELLIOTT PAINE. Private 43d Mass. V. M. 20 Sept., 1862. Assigned to Hosp. Dept. Mustered out 30 July, 1863. Med. Cadet U. S. A. Mt. Pleasant Hosp., Washington, D. C., for fourteen months. Asst. Surgeon 104th U. S. C. T. 21 Aug., 1865. Mustered out 5 Feb., 1866.

1865. JOHN FRANCIS SAVILLE. Asst. Surgeon 4th Mass. H. A. 5 Dec., 1864. Resigned 17 June, 1865.

1865. JAMES EDWIN WALKER. Act. Asst. Surgeon U. S. A. 24 June, 1862. Assigned to 5th Me. Vols. in front of Richmond, Va.; battles Gaines's Mill; Charles City Cross Roads; Crampton's Gap; South Mountain, Md. Discharged 24 Sept., 1862.

1865. ATWOOD CROSBY. Private 3d Me. Vols. 1861. Prisoner at

Bull Run, Va.; confined at Tuscaloosa, Ala., and Salisbury, N. C.; exchanged. Act. Asst. Surgeon U. S. N. 27 June, 1864. S. A. Block. Squad off Beaufort, N. C., Appalachicola, Fla., and Tampa Bay.

1865. JOHN HARDY BLODGETT. Private U. S. N. Hosp. Steward. Act. Asst. Surgeon U. S. N. 10 Sept., 1864. Prisoner at Stanton, Va., and Libby Prison, Richmond. Honorably discharged 5 Sept., 1865.

1866. EDMUND WILLIS SLAYTON.

1866. HENRY DAVIS WYATT. Private 15th N. H. Vols. Sept., 1862. Sergeant, Oct., 1862. First Lieutenant 15th N. H. Vols. 3 Nov., 1862. Port Hudson, La.; wounded, 27 May, 1863. Mustered out Aug., 1863. Asst. Surgeon 1st U. S. Colored Art., 9 Feb., 1865. Greenville, Tenn. and Chattanooga. Mustered out 31 March, 1866.

1866. ELI MELLEN WRIGHT. First Lieutenant 23d Me. Vols. Aug., 1861. Resigned 15 Dec., 1862. Asst. Surgeon 1st U. S. C. T. May, 1865. Mustered out March, 1866.

1866. CALVIN CURTIS ELLIS. Act. Steward U. S. A. May, 1864. Swan Hosp., Montpelia, Vt. Discharged 1 May, 1865.

1866. CHESTER MANNING FERRIN. Private 8th Vt. Vols. 28 Nov., 1861. Hosp. Steward, Div. Hosp., Sept., 1863, Dept. of the Mississippi; battle Camp Bisland, La.; siege of Port Hudson; battles Donaldsonville; Alexandria; Red River. Mustered out 22 June, 1864.

1868. CHARLES TOTMAN FRINK. Sergeant 1st Art. U. S. A. (at opening of war). Stationed at Fort Brown, Texas; on surrender of that post, 9 March, 1861, ordered to Tortugas, Fla.; to Beaufort, S. C.; 16 June, 1862; New York, May, 1863; in Hosp., and on leave till discharged July, 1864.

1868. JAMES NATHANIEL GRANGER. First Lieutenant 2d R. I. Vols. 21 Jan., 1865. Campaign near Petersburg, Va. Mustered out 13 July, 1865.

1868. EDWIN DEVEREUX JAQUES. Private 17th Me. Vols. 18 Aug., 1862. Battle Fredericksburg, Va. Mustered out 10 Feb., 1863.

1868. WILLIAM CHAUNCY HALL NEEDHAM. Private 60th Mass. V. M. 19 July, 1864. Mustered out 30 Nov., 1864. Practiced medicine at Gallipolis, Ohio; City Physician, 1878; member of Ohio Senate. Died at Columbus, Ohio, Jan., 1882.

1868. ASHBEL HENRY CRAM. Private Cav.

1869. CHARLES HIRAM COLGROVE. Sergeant. Marine Hosp., New Orleans, La. Mustered out June, 1863. Died 3 Jan., 1866.

1869. LEONARD MARSHALL ENDY. Private 15th N. H. Vols. Aug., 1862. Attack on Port Hudson, La. Mustered out 13 Aug., 1863. Died at Bartlett, N. H., 29 Nov., 1876.

1869. NATHANIEL BRIGHT EMERSON. Private 1st Mass. Vols. 22 May, 1862. Battles Fredericksburg, Va. (wounded); Chancellorsville

(wounded); Gettysburg, Pa.; Locust Grove, Va.; Mine Run; Wilderness; Spottsylvania. Mustered out 25 May, 1864.

1869. CHARLES WILLIAM LYNN. Private Oct., 1861. Attack on Roanoke Island, N. C.; battles Newbern; Kinston; Goldsboro; Petersburg, Va.; Hosps. Newbern, N. C.; Hammond; Fort Monroe, Va.; Point Lookout, Md.; Dale; Worcester, Mass. Mustered out Oct., 1864.

1869. JACOB GILBERT FORMAN. Chaplain 3d Mo. Vols. 17 Sept., 1861. Also Act. Chaplain 1st Mo. Cav. and 3d Inf. U. S. A.; battle Cape Girardeau, Mo.; Hosps. St. Louis, Mo.; Cassville, and Helena, Ark.; Supt. of Refugees at St. Louis, Mo.; and Sec. Western San. Com.; Author of "History of Western Sanitary Commission." Mustered out 31 Nov., 1865. Returned to Mass. Oct., 1866; studied medicine at Harvard Med. School; accepted call to preach at West Bridgewater, Mass., April, 1867; purchased a store in Lynn, 1869, and engaged in the business of a druggist for remainder of his life. Died at Lynn, Mass., 7 Feb., 1885.

1869. GEORGE WASHINGTON WARREN. Private 11th Baty. Light Art. Mass. Vols. 2 Jan., 1864. Mustered out 29 May, 1863. Died at Brighton, Mass., 3 Sept., 1864.

1870. JAMES SHERMAN GRISWOLD. Served in Hosp. in Philadelphia, Penn. Died at Worcester, Mass., Dec. 29, 1889.

1870. RICHARD D. McGRAW. Second Lieutenant 5th N. Y. Vols. 1862-65.

The names of the following eight men were given to H. I. Bowditch in 1866 as having been engaged in the service of the United States during the War. They are not found in the Annual Catalogues or in the matriculation books of the Medical School. It is believed, however, that the men were temporarily members of the School, and that they left for the purpose of entering the service before their names were enrolled as actual students.

G. D. BASSETT.

ORLANDO BROWN.

BENJAMIN FRANKLIN EATON. Died at Hartford, Vt., 1 March, 1882.

JAMES HARRIS. Died, 1865.

——— HUFF.

D. McALLISTER.

M. L. MORSE.

J. W. ONGLE.

1898. EDSON PARKER HOWES. Hosp. Steward May 3, 1898. 2d Mass. Inf. U. S. V. In campaign against Santiago. Battle El Caney on July 1. In Hosps. 1st, 2d, 3d Div. On board the Berkshire. Detention Hosp. at Montauk Point. Mustered out Nov. 3, 1898.

1898. CHARLES FRANCIS SANBORN. Private, Hosp. Corps, U

S. A. April 28, 1898. Act. Hosp. Steward. July 25, 1899. Camp at Port Tampa, May, 1898. 1st expedition to Cuba. Santiago June-Aug. With army of occupation Camps A. G. Capron, Maceo and Carpenter. Discharged March 11, 1899.