

Dedication of the new buildings of the Harvard Medical School : September twenty-fifth and twenty-sixth, nineteen hundred and six.

Contributors

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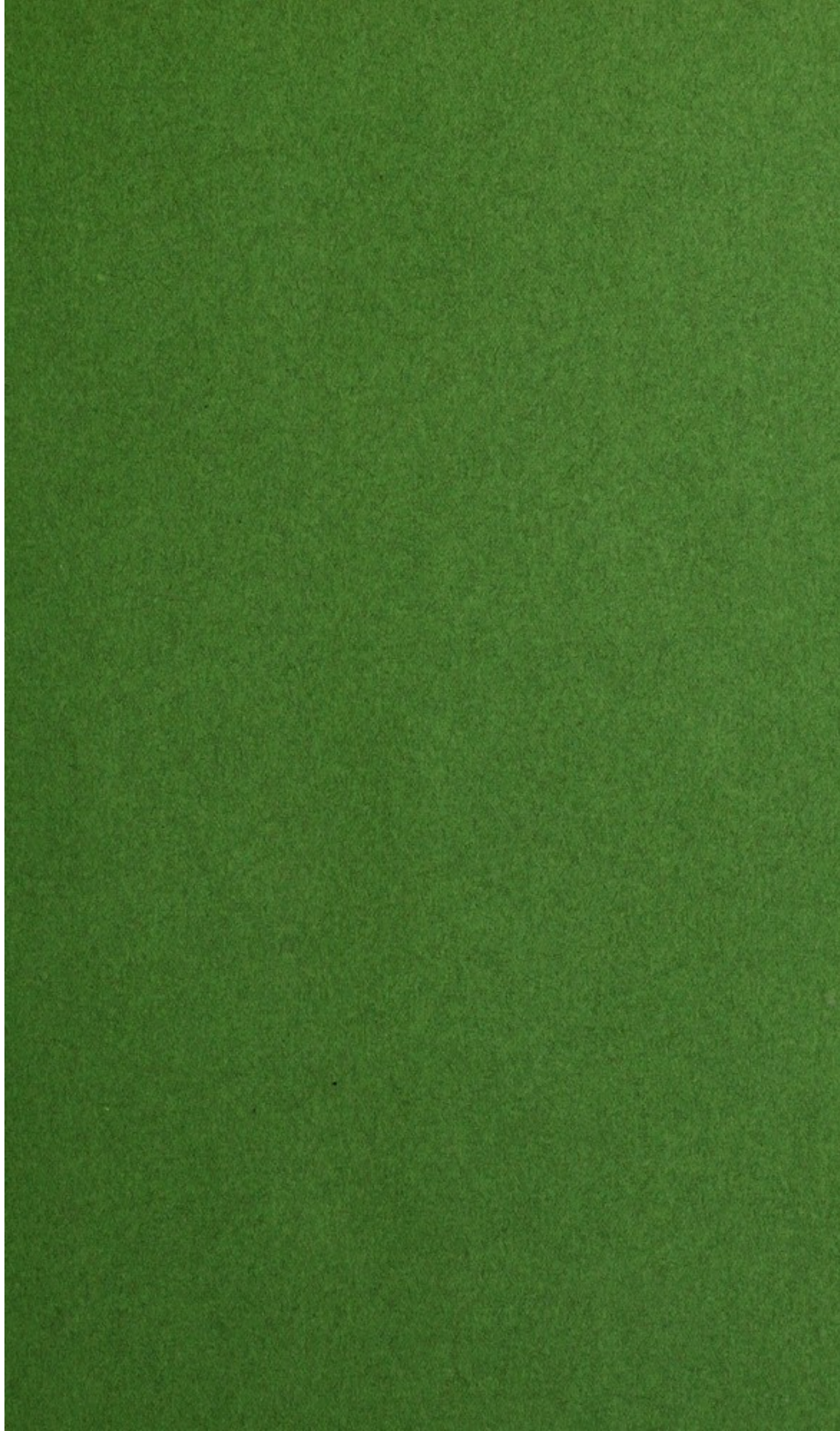


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HARVARD Univ





WITH THE COMPLIMENTS OF
THE FACULTY OF THE HARVARD MEDICAL SCHOOL

HARVARD Univ



THE FACULTY OF THE HARVARD MEDICAL SCHOOL
WITH THE COMPLIMENTS OF

DEDICATION
OF THE NEW BUILDINGS OF THE
HARVARD MEDICAL SCHOOL

SEPTEMBER TWENTY-FIFTH AND TWENTY-SIXTH
NINETEEN HUNDRED AND SIX



BOSTON
PUBLISHED BY THE FACULTY OF MEDICINE



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TUESDAY, SEPTEMBER TWENTY-FIFTH, AT 2 P.M.

at the School Buildings, Longwood Avenue, Boston

DEDICATORY EXERCISES

The President and Fellows, Overseers, Faculties and their Officers met the Delegates from other institutions and other specially invited guests at 1.45 P. M., in the Administration Building, whence they were escorted to the Terrace.

Other guests and Alumni of the Medical School assembled on the lawn in front of the Administration Building.

The Rev. George A. Gordon, D.D., offered prayer :

Infinite Father, Lord God of our fathers, Framers of our bodies, Author of our spirits, in Thee we live and move and have our being. From Thee we receive existence, power, interest, enduring inspiration. Our guiding ideals are from Thy conscience; the fountains of love are opened in our nature by Thy hand; we renew our wills in Thine. Therefore we look to Thee in this significant hour; therefore we open our being to Thy silent and solemn appeal.

It has pleased Thee to make our existence of body and soul. It has pleased Thee to surround each part of our existence with infinite opportunity and infinite peril. It has pleased Thee in

bringing relief and victory to man to help men through men. Thou hast called into existence, from the morning of time, among all peoples, the sacred profession of the healer. Thou hast renewed this profession, in these latter days, in knowledge, in skill, in devotion, in vast hope. Bless, we pray Thee, our Father, the members of this profession in all lands—friends of mothers and little children, the comfort of parents, counsellors of youth, the strong defence and high tower of all who toil for the physical well-being of mankind.

Accept, we pray Thee, these buildings, the work of our hands, and dedicate them to their most sacred uses. May they stand the honor and joy of all those who have made them possible and actual, and of all those who love the sacred cause for which they stand. May they continue for many centuries to serve in the liberation of man from physical evil, in the introduction of man to the world of health, vigor, joy, and his establishment therein. And when at last they shall crumble and fall away, as all things earthly must, still beautiful in ruin may they speak of that which they have seen and testify of that which they have served—one of the greatest of human epochs, one of the mightiest of human redemptions. We offer our prayer in the name of the Great Physician. AMEN.

John Collins Warren, M.D., LL.D., F.R.C.S. (Hon.), Moseley Professor of Surgery, spoke upon "The Enlarged Foundation":

It is my duty and my privilege to announce to you on this occasion the completion of the great undertaking in which the Faculty of Medicine has been engaged during the past five years.

The first great step towards the foundation of a medical university has been accomplished, the laboratories for teaching and research

are about to be opened on a scale far beyond what has been attempted before, and this great machine, with all its vast resources, is to be made an agent not only for the diffusion of learning, but for substantial aid and comfort to the suffering in the numerous hospitals by which it is soon to be surrounded.

But these noble buildings speak not only for a new era in medical teaching and medical research, but also for the interest which has been aroused in their behalf by men and women of public spirit.

How could a more appropriate and enduring monument to illustrious dead be raised than such as these !

This group of three buildings, with classic outline, a fitting memorial to a noble Junius, one whom we are proud to remember as a former citizen of Boston, is to-day dedicated to science by the princely liberality of a son — *Filius patre dignus* — whose benefactions are a household word wherever science and the fine arts are held in high esteem.

Nearby stands a memorial to one of the pioneers who have opened a pathway for the commercial world to the treasures of our great West, a monument made possible by a lady bountiful, whose devotion to the memory of her husband has been illustrated in many a worthy cause.

But it should not be forgotten that one building is the gift of a citizen of Boston, and is to bear an honored Boston name, a name which stands for all that that implies ; and we shall ever gratefully recall the innumerable gifts of the grand army of Bostonians who are, and always have been, ready with generous aid.

Last, but not least, we must remember to-day the good deed of one who studied with intelligent care this great educational problem, and by generous endowment made it a living reality.

To you benefactors all I stand here to-day, in behalf of my colleagues, to say that from the bottom of our hearts we thank you,

and that we appreciate what you have done for us, and we would pray for good-will and sympathy from you in our work, for does not scripture tell us, that "where thy treasure is there will thy heart be also."

Charles Allerton Coolidge, A.B., representing the architects, announced the completion of the buildings :

MR. PRESIDENT: I have the honor to announce to you the completion of these buildings devoted to medical research and teaching ; and I now hand you the keys.

The acceptance of the buildings was made by the President of the University in these words :

On behalf of the President and Fellows of Harvard College, I accept these buildings, and the permanent funds accompanying them, as the largest single addition to the resources of the University which has ever been placed in the hands of the Corporation since it received its charter in 1650. The President and Fellows well understand to whom they are indebted for this great gift. It is due in the first place to the constructive imagination and indomitable zeal of a few of the University's teachers of medicine ; secondly, to the discerning and liberal acceptance by a few rich men and women of a veritable opportunity to do some lasting and pervasive good, with no admixture of evil, and with high promise of prompt beneficent results, a promise firmly based on the rapid progress of medical science within the past thirty years ; thirdly, to the accumulated influence in favor of the medical profession which has been exerted in Boston and its vicinity for more than a hundred years by a series of much respected medical personages and strong medical families ; and lastly to the habit of contributing

to public objects from private means, clearly manifested by the first settlers on Massachusetts Bay, and maintained and amplified by the best part of the community in every generation since, as the people rose from poverty to comfort and through a diffused well-being to occasional private affluence and public magnificence. These superb buildings, therefore, are an expression of the intelligence and public spirit of many generations, and of the ardent hopes of the present generation for a new relief of man's estate. I accept them thankfully with the assurance in return that the Governing Boards and Faculties of the University will do everything in their power to increase that intelligence, to propagate that public spirit, and to fulfil those hopes.

The Dean, William Lambert Richardson, M.D., Professor of Obstetrics, then spoke for the Faculty of Medicine :

MR. PRESIDENT : Twenty-three years ago, having outgrown the old building on North Grove street, the Medical Faculty moved to the new School at the corner of Exeter and Boylston streets. The dedication took place in December, 1883, and was of especial interest as it marked also the one-hundredth anniversary of the founding of the School.

This new building was so large and so well equipped in every way that it promised to be the home of the School for many years to come. Within a very short time, however, more room was needed and, through the generosity of Dr. Henry F. Sears, the eastern wing was added and opened in December, 1890.

A few years only passed when the increasing demand for more practical and less didactic instruction soon demonstrated the fact that the laboratories were wholly inadequate to meet the requirements. The need of more room for the purposes of medical education became evident, while the work of medical research was

also seriously handicapped by the limitations of the laboratory facilities.

In the spring of 1900 the Faculty decided that another move must be made, and the first steps were taken, the results of which we see to-day. Since then the members of the Faculty have watched with growing interest and pride the erection of these magnificent buildings. To-day they are to be dedicated and the School opens under the most auspicious circumstances.

In these new buildings all that one could ask for has been provided, both for medical education and for scientific investigation and research. Here we have, as the President of the University stated, on another occasion, "the means for a new start for medical education and research in our country."

The facilities are so ample and the equipment so complete that the Faculty has decided to make a new departure and to open all courses, including laboratory courses, to persons not candidates for the degree of Doctor of Medicine, including special students in other departments of the University.

In taking possession of these new buildings the Faculty feels a great responsibility and can only express the hope that the future history of the School will show that the Faculty has been faithful to the trust this day committed to it.

Thomas Dwight, M.D., LL.D., Parkman Professor of Anatomy, speaking for the laboratories, said :

A public meeting was held on October twenty-second, 1874, to raise funds for the proposed new building for the Harvard Medical School, that one which we entered in 1883 and which we now relinquish. The following sentence appeared in the Boston Medical and Surgical Journal of the day of the meeting : "The country may be spared the reproach of seeing the richer graduates

who desire a perfect medical education flock to foreign schools, while the poorer ones complain that by being kept at home they must start in the race for success with the drawback of insufficient training." It is a great satisfaction to me, the writer of those words, to feel thirty years and more later that their implied promise has been kept. I am a firm believer in foreign travel and study as broadening the mind and admitting new trains of thought. It is not superfluous for our graduates, and it never will be ; but we may say even now that, however desirable, it is no longer essential.

In that same period of struggle President Eliot used words which have never left my memory : "The first step towards obtaining an endowment is to deserve one." We are confident that our benefactors of a generation ago have never felt that we appealed to them under false pretences. But as I look around me to-day on this wonderful scene, which thirty years ago would have been absolutely beyond imagination, I do not dare to speak of deserts. Rather I think with awe on the obligations imposed upon us, on the account to render and the return to make. Yes, there is a return to make ! The generous givers do not demand it for themselves ; they claim it for the poor and the suffering, and for the world at large through the advancement of medical science.

One of the most striking phenomena of medical education during the past thirty years has been the gradual, unconscious, progressive, self-arrangement of the various studies into two grand groups, that of the laboratory and that of the clinical departments. The former are in the main preparatory to the latter, in which the patient is the central figure. Sometimes the former are spoken of as the scientific courses ; but this is an usage against which I protest. It is a reflection on the clinical courses, for all study and instruction should be scientific. On the other hand, the word "scientific" may suggest that the laboratory courses are not

practical. This would be to say that they are taught under a misapprehension of the primary purpose of a medical school, which is to train students to practise medicine on their fellow beings. But, and here is the heart of the matter, there is a sharp distinction between courses which are essential to a degree, and those which are not. Our work lies in two very different provinces. The first and principal one is to teach the student what is needful, in which our efforts are directed towards a definite end ; the other to gain by our labors, and to help advanced students and specialists to gain by theirs, the secrets of nature. It is eminently proper that courses should be offered and investigations made by the latter the practical advantages of which must be very remote. None the less we are sure that they will come in the end. Let us strive for the facts and the applications will take care of themselves. Which of the great discoverers in modern science, too numerous to mention, had, or by any possibility could have had, any adequate foreknowledge of what wonderful fruits posterity should reap from his labors, or in what profession?

But this pronounced separation of the departments into these groups implies no opposition between them. On the contrary, I see everywhere the laboratory departments adding more and more copiously to the knowledge directly applicable to the welfare of our neighbors. If I mistake not a new era has begun which already has given an earnest of what science can do for humanity, and which in the future will gain results beyond our hopes.

Were I speaking only for my own department, that of anatomy, I should go on to illustrate my views from the history of the past, and should unfold my hopes for the future ; but this may not be. I have the honor to speak for all the laboratory departments. I cannot presume to do this adequately. Therefore I look for some central idea, some common interest, some link that binds us together. I find it in the museum which occupies the upper part

of the noble building before which we stand. A great museum is the crown of a medical school, the chronicle of its progress. Whenever I visit London I am drawn as by a magnet to the Hunterian Museum, where I admire the genius of the master and the talent of his followers. Let us hope that the Warren Museum may exercise a similar attraction on many. It is held in honor by all who have the progress of medical science at heart for its close association with the memory of its founder. It was through his influence, while a Harvard professor, that Massachusetts was the first English-speaking Commonwealth to pass a law legalizing the study of anatomy. This must rank as one of the greatest services which Harvard has rendered to civilization.

A museum, let it be understood, is not a collection of specimens to be used as occasional implements for teaching. Such are indeed needed, but their place, with few exceptions, is not there. Neither is a museum a miscellaneous assortment of curios. It is a collection demanding the greatest technical skill in its arrangement. It should show the normal structure of man, the minute as well as the palpable, the variations of the different systems, their resemblance to those of animals, their development, growth and decline, together with the changes incident to malformation and to disease. Where preparations are not available all this must be made clear by charts, models, microscopic preparations and lantern slides. Moreover, there should be an exhibition of the apparatus for the study of the living organism in action, and of the instruments used in the treatment of disease. I use the word "instrument" in its broadest sense, so as to include not only those manufactured by man, but also living things from nature's laboratory. All must be so arranged as to illustrate the continuous progress of science. Such a museum includes the tribute not only of the laboratories but of the clinical departments as well. It is a striking reminder of how short is life and how long is art. We workers leave some faint trace and pass

like shadows; but the museum continues from generation to generation. Posterity shall read in it the record of the return that the Harvard Medical School has at least tried to make.

Frederick Cheever Shattuck, M.D., Jackson Professor of Clinical Medicine, represented the Clinics:

Medicine is an intensely practical calling. It appeals to us just in so far as it strives to prevent, cure, and alleviate disease, the cause of so much misery, of so much impairment of efficiency, so destructive of the joy of living. Great progress has been made in the past quarter century when friends of medicine housed us as we thought adequately for a half century. You realize the fact of progress, which has been brought closely home to many of you. Your imagination tells you that what has been won is a mere earnest of what is to be won. You see that there is no investment so safe, permanent and productive as that in medical education and research under the auspices of a great university. With far-seeing liberality you have, therefore, provided the ample, beautiful buildings which surround us. You have not forgotten that buildings are but a shell, that endowment is needed for their maintenance, and, above all, for the support of workers therein whose discoveries, unlike those of some other men of science — chemists, electricians, physicists — by an unwritten but immutable law may not be patented. Such money value as can be attached to a discovery in medicine — and it may be incalculable: witness diphtheria anti-toxin — is reaped by humanity at large rather than by the discoverer, who is contented with rendering service and with such fame as may haply attend it later or sooner.

We dedicate to-day these buildings to medical education and to medical research, two branches and aspects of medicine, whose progress is greatly favored by association.

We rejoice in the present ; we are full of hope and courage for the future. But, whether in joy or sorrow, it is always well to think straight, to face facts, to see just where we are.

Although it does not strictly belong to me so to do on this occasion I cannot forbear mentioning one fact in passing. Much more endowment, namely, must and will be provided to render this great plant properly, duly productive. But the paramount fact to which I beg to call your attention is that you see about you only a portion, I think I can safely say the subordinate portion, of the necessary means for furthering progressive medicine. You see provision for the foundations of medical study and for such research into the nature of disease as can be adequately carried on outside of, more or less apart from, a hospital which is as truly a laboratory as any one of this group of buildings. All of the first year and a half of the student's time will be passed within these walls, as well as the afternoons of the second half of his second year, largely in studying healthy structure and function. During the mornings of the second half of the second year he begins to come into direct contact with the modifications of structure and function resulting from disease in the living man. Then it begins to be brought home to him how infinitely various may be the manifestations of one and the same disease in different individuals, how different diseases or diseased processes may be interwoven in the same individual. His third and fourth years are almost wholly devoted to clinical bedside-study in hospital wards and Out-Patient departments. Thus, roughly speaking, the four years of undergraduate study are nearly equally divided between the laboratory and the hospital. Then should come one to two years' residence in a hospital, with gradually increasing responsibility, that great teacher, before a man is duly qualified to start practice. And practice, rightfully considered, is a life-long course of post-graduate study. These buildings, then, serving for only half the needs of the under-graduate

student — their function as centers of research into the unknown being passed over though not forgotten — what provision, you may ask, is made for the other half? Where are the hospitals? What relation do they bear to the Medical School?

The two great and many of the lesser hospitals of the city are within easy access. One of the smaller hospitals has already moved into the immediate neighborhood; two more are coming, and we have good reason to hope that within a few years a new and largely endowed general hospital will be in operation at our very doors, in full coöperation with the University in the promotion of the highest aims of medicine. I do not know a medical school in the country which at present enjoys such clinical advantages as does the Harvard School. And these are to be largely supplemented in the near future. In England the hospital and the medical school, privately endowed, have grown old together in a happy marriage. To-day the strain of the necessity for laboratories and their proper support is being keenly felt in that country, to the liberality of whose rich men the higher education does not seem to appeal so strongly as it does with us. On the continent of Europe hospitals and medical schools are practically parts of the State and are supported by it. In this country the two grew up independent of one another for reasons which, however interesting they are, we cannot here consider. Their separation has been and is still a bar to progress in this country. There has been a feeling, not unnatural among laymen, that the prime, if not sole, function of a hospital is the cure of the sick within its very walls, and that this function is impaired or deranged by the introduction of teaching, by the use of the hospital as an educational center. It was feared that the individual might be sacrificed to the cause; that science is coldly indifferent to suffering. The keen American intelligence of those responsible for hospital management is rapidly recognizing the indisputable fact that the humanitarian

and the educational duties of a hospital do not conflict — that they are indissolubly bound together if, indeed, they are not identical. The patients under the charge of a teacher of medicine, surrounded by sharp-eyed and critical young men, are sure to receive more careful study than patients not so guarded. Routine, that refuge of sloth, is minimized. Correct and early diagnosis, the basis of rational treatment, is more likely to be secured. That sick man is fortunate whose doctor, while caring for him, cares also for the advance of knowledge in medicine in the largest sense.

A hospital is a collection of the sick, and concentrates means and appliances for their care and cure which in private practice must be scattered, and thus difficult or impossible of full use, even by the rich.

The poor in hospital, especially if the hospital is also a center of medical education, often get better care than the rich in their "mansions."

I repeat that a hospital is truly a laboratory for the relief, cure, and study of the experiments wrought by disease on human beings. In the laboratories about us healthy animals are the subject of experiments made, under a due sense of responsibility, for the purpose of ascertaining what disease is in order the better to prevent and cure it. A wise benefactor has provided a foundation for Comparative Pathology, that is to say, for the study of the diseases of men and of the lower animals and of the mutual relations of the same. It is only within very recent times that we have begun fully to realize the importance of this study. In the hospital the surgeon of to-day is really a vivisector. Our knowledge of the interior of the body was formerly mainly derived from inspection after death. The most hidden parts are now laid bare to the eye and hand by the knife in the living man, resulting in priceless gain for physiology and pathology. The effort to succor the individual promotes the well-being of mankind in general.

Whatever the source of a hopeful suggestion for relief or cure the final test and proof must lie in the hands of the clinician, who deals with human beings, allied to but not identical with other animals. The hospital clinician and teacher occupies a vantage position. He has the ready coöperation of a band of experts in the different branches of medicine and of every affiliated science. He has access to every useful appliance for diagnosis or treatment. The aggregation of the sick saves precious time in that it permits that multiplication of tests which is necessary by reason of the manifold sources of error which surround every problem of life. The common distinction between the scientific and the practical branches of medicine is an unfortunate one as it is not real. No one can tell how soon the fact, however isolated and unimportant it may seem, however derived, will, by connecting with other facts, become of prime practical value. The clinician in his daily work, alike inside and outside the hospital, may, nay should, be as animated by the scientific spirit and should pursue scientific methods—be as scientific—as his brother of the laboratory in the ordinary sense of the word. The two are interdependent.

Let no one think that the scientific spirit leads to lack of sympathy with suffering and the individual who suffers. But the head must govern the heart. There is no incompatibility between a cool head, hard if you like, and a soft heart.

We are grateful for what we have. In addition we need, first, increased endowment for what you see about you, and, second, closer alliance with hospitals to bring our facilities for clinical teaching and research abreast of those for the basic branches of medicine. Provide the best guns and have faith that the men to fitly serve them will appear if such are not already behind them.

Then followed the dedication of the buildings by the President of the University :

I devote these buildings, and their successors in coming time, to the teaching of the medical and surgical arts which combat disease and death, alleviate injuries, and defend and assure private and public health ; and to the pursuit of the biological and medical sciences, on which depends all progress in the medical and surgical arts and in preventive medicine.

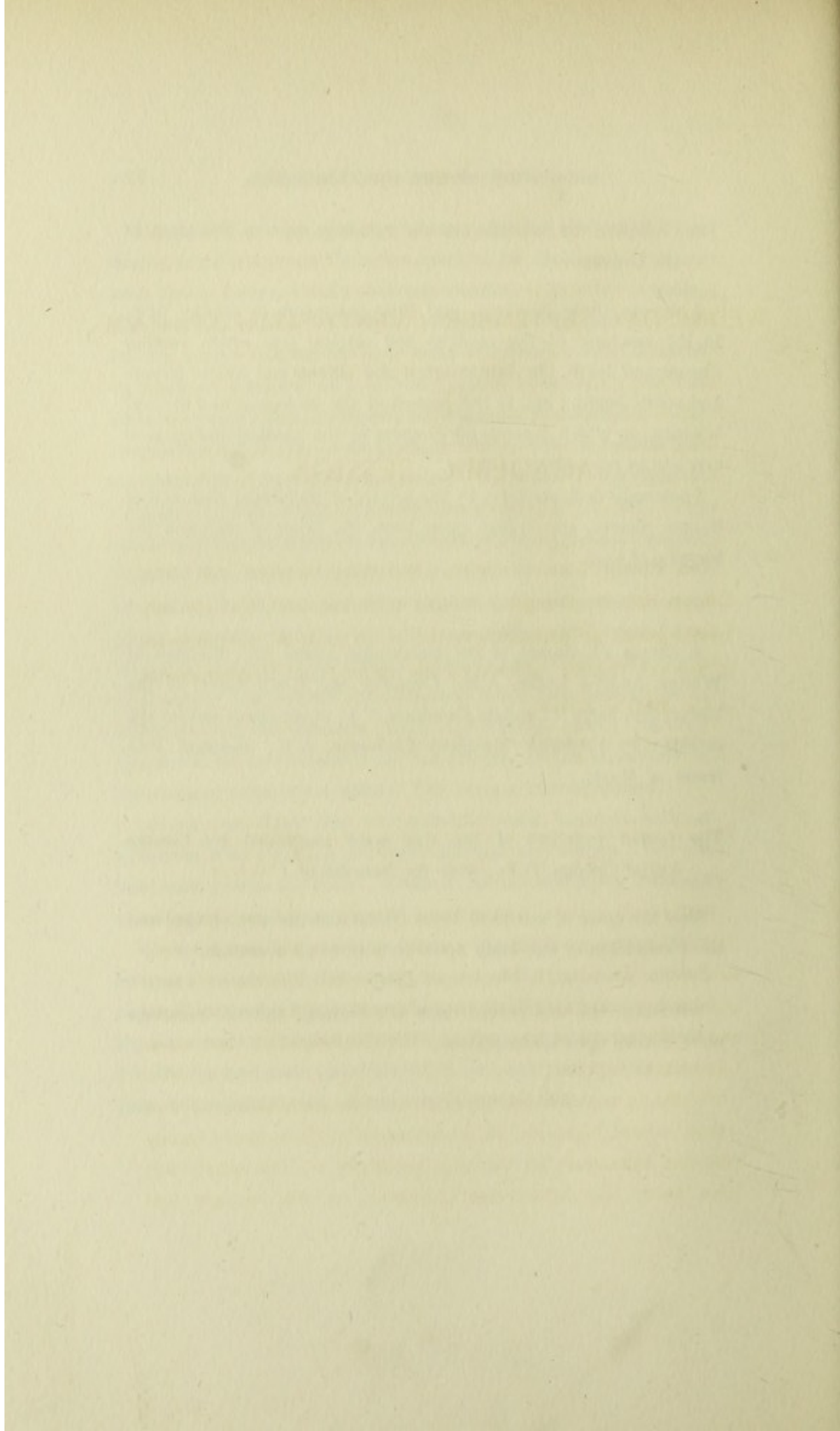
I solemnly dedicate them to the service of individual man and of human society, and invoke upon them the favor of men and the blessing of God.

A chorus of Alumni of the University, under the direction of Warren Andrew Locke, A.M., Organist and Choir-Master of the University, sang " Laudate Dominum," to music composed for the occasion by Frederick Shepherd Converse, A.B., Assistant Professor of Music.

The formal exercises of the day were concluded by George Angier Gordon, D.D., with the benediction :

May the grace of our Lord Jesus Christ and the love of God and the communion of the Holy Spirit be with us all evermore.

Afternoon tea was served upon the terrace, and the buildings were thrown open for inspection.



WEDNESDAY, SEPTEMBER TWENTY-SIXTH AT 11 A.M.

at the University in Cambridge.

ACADEMIC SESSION.

The President and Fellows, Overseers, Faculties and their Officers met the Delegates of other institutions and other specially invited guests at Massachusetts Hall at 10.30 A. M. and proceeded to Sanders Theater, escorted by the Alumni and Undergraduates of the Medical School.

Other guests assembled in Sanders Theater.

The exercises of the morning were opened with prayer by Edward Caldwell Moore, D.D., Parkman Professor of Theology :

Almighty God, Who hast revealed Thyself in the deep things of Thy nature through deeds and sacrifice of loving and merciful men, look down, we beseech Thee, upon that which Thy servants here in faith have dedicated to the discovery and teaching of Thy truth and for the service of their fellows, Thy children, in all their manifold affliction and pain.

For the devoted lives of physicians in this community and elsewhere, whose hopes for the advancement of their sacred calling here find utterance ; for the large generosity of those gifts which have made this achievement possible ; for the foresight and

patience, the high consecration of him and of those who have long borne the interests of this University upon their hearts and whose cherished purposes are here fulfilled, for these we give Thee thanks.

Vouchsafe that here in the School thus set apart unto a holy task new revelation of truth from nature may with unfailing earnestness be sought and knowledge of the mystery of life be furthered. Here may men be raised up in the spirit of entire devotion to the pursuit of such knowledge and, not less, in the spirit of self-forgetful service of a weak and suffering humanity, after the example of One who also went about doing good and who came not to be ministered unto but to minister.

So may the lives of little children be preserved, the strength of youth for the labor of maturity enhanced and the distresses of old age diminished. So may woes be alleviated, diseases prevented, and the joy and power of human life increased. This we ask in the spirit of Jesus Christ. AMEN.

The Alumni Chorus then sang "Here Discovered are Foundations," by Grieg.

The President of the University spoke upon the Future of Medicine :

The future occupations and interests of the medical profession are to be in some respects different from those of the past, and they are to be more various. The ordinary physician has for the last hundred years been almost exclusively a man devoted to the treatment of diseases already developed in human bodies or of injuries already incurred. He made his diagnosis, and then sought remedies and a cure. He was the sympathetic and skilful helper of sick or injured persons. Most of the cases that came under his care were

cases considered plain as to symptoms, period, and accepted treatment. The minority of cases were obscure, and called for unusual knowledge and skill in discerning the seat of the disorder, or the approximate cause of the bodily disturbance. Hence the special value of the experienced consultant, who was ordinarily a man of some peculiar natural gift of body, mind, or temperament, possessing also in high degree the faculty of keen observation, and the habit of eliminating irrelevant considerations, and ultimately finding his way to the accurate, limited inference from the facts before him. Both the ordinary physician and the consultant have already been much helped by the extraordinary progress made in medical science during the last thirty years ; but they have been helped chiefly to a surer recognition of diseases established in human bodies, and to a better treatment of their patients' diseases when recognized.

The physician or surgeon commonly renders a personal service to an individual, sometimes for a pecuniary recompense, but often without money compensation. He is often a trusted adviser in the most intimate family concerns. Births and deaths alike bring the physician into the home. In rendering these services he must be tender, sympathetic, considerate, pure-minded and judicious. There will always be need, crying need, of the physician and surgeon in this sense, and for these functions ; and whatever else the regular education of the physician provides in the future, it must provide all the elements of the best training for the practising physician who is to treat diseased or crippled human bodies, and give advice about the sudden and the chronic ills which afflict humanity. So much will continue to be demanded of all good medical schools ; but much more they must do.

The progress of what we call civilization exposes human beings more and more to the ravages of disease. When savages come in contact with men called civilized, they invariably suffer from

diseases new to them. When a rural population crowds into cities it falls a victim to diseases from which in the country it had been exempt. When hundreds of thousands of people huddle into small areas, and create there smoke, dust, and noise, they suffer not only from new diseases but from the exacerbation of diseases not wholly unknown to them in their rural condition. Under such unfavorable conditions of residence and labor the human body degenerates in many respects, and losing vigor becomes, in some respects, less able to resist the attacks of disease.

Against these bodily evils which result from civilization the physician has thus far struggled, chiefly by treating more or less successfully the numerous individuals who are attacked by disease. Doubtless the treatment of sick and injured persons has substantially improved; but nevertheless the death-rate in our cities diminishes slowly, and the heavy economic losses which result from disease and premature death continue. Moreover, the improvement of treatment in hospitals and private practice has been accompanied by a great increase in the cost of treatment, so that the charges upon the community resulting from sicknesses and injuries have within the last thirty years rapidly mounted, and these heavy charges are, after all, incurred for the palliation of evils already suffered, and not for the prevention of such evils. Again, in different parts of the habitable globe mankind has been exposed for centuries to dangers more or less localized; in one region to the attacks of venomous reptiles; in another of fierce carnivora; in another to the ravages of flights of insects which devour every green thing; in another to the constant presence of formidable diseases. For the most part, the human race has learnt how to exterminate the offending creatures, or at least to limit their ravages; and where grave infectious diseases are always present in greater or smaller degree, or frequently recur, a considerable proportion of the population becomes in some degree immune

to them. Mankind is now in face of enemies which are not localized, but which, on the contrary, are carried all over the habitable globe on the ubiquitous routes of travel and commerce. The worst of the new enemies are minute, multitudinous and mysterious in that their relations and connections are unknown; they infest many of the animals with which man is associated, or pass into man from the animals and plants of which he makes use. Untrammelled dissemination of noxious things has taken the place of centuries-long localization, a localization which sometimes secured checks, antidotes, or immunities. Since, then, modern society cannot help incurring new risks, it should seek new defences. These defences it may reasonably expect medical education to plan, and public and private expenditure to provide.

If civilized society is to endure under its new exposures and dangers, it is clear that the medical profession must take up with new ardor the work of preventing approaching disease in addition to the work of treating disease arrived. The profession must recognize that health is eminently a social product, just as the psychologists have recognized that the mind of a civilized man is a social product.

When we consider what has already been learned about the production, transmission, and prevention of smallpox, cholera, yellow fever, the black death, typhoid fever, diphtheria, anthrax, rabies, and tetanus, we cannot resist the conclusion that in the future medical science must include the study of causes and sequences which will carry the student through a large portion of the animal and vegetable kingdoms, and particularly into the habits and habitats of their minute parasitic forms. Systematic medical education must therefore produce a considerable number of men capable of studying in this region the causes of disease, and the ways of interrupting the means of communication, or breaking the chain of sequences, through which at last the germs of disease get

a chance to produce their malignant effects within the human body. Considering the great obscurity of the physiological processes which go on within the body and the dense ignorance of mankind concerning the microscopic animal kingdom, it is a great wonder that medical science in its imperfect state has constructed so many effective defences against disease within the last thirty years. Indeed, we are now using some efficient defensive methods, the real nature of which we but imperfectly understand, as for instance, the vaccinations against smallpox and hydrophobia. Although we are not yet able absolutely to prevent disease, we are able in many cases to restrict the communication of diseases and to modify their course in the individuals attacked.

The medicine of the future has therefore to deal much more extensively than in the past with preventive medicine, or in other words, with the causes of disease as it attacks society, the community, or the state, rather than the individual. The object in view will be not only to arrest or modify a malady which has appeared in the body of a patient, but, as in the recent case of yellow fever, to learn how the disease is communicated and how to prevent that communication. The study of mitigations, remedies, and cures is to continue; but the study of the causes of disease and the means of prevention is to be greatly developed. The function of the nineteenth century physician will continue, and indeed will become more effective through a better knowledge of the forces which may be made to act upon his patient both from within and from without; but another sort of physician will be at work in the twentieth century preventing the access of epidemics, limiting them when they arrive, defending society against bad food and drink, and reducing to lowest terms the manifold evils which result from the congestion of population. The explorers and pioneers in medical science must be encouraged to press on their patient work of analyzing all the processes which accompany

disease, in order that they may learn their actual sequences. Only through the knowledge of these sequences can real control over disease be certainly gained. And this work will be endless; for civilization involves constant changes in the environment of the human race; and it is on medical science that the race must depend for protecting it from the new dangers which accompany each novel environment. The medical scientists being provided and furthered, medical education must also train large bodies of men to clear and cultivate the regions through which the pioneers have made trails, or, in plainer words, to apply to millions of men and women in all sorts of climate and environment the discoveries of the scientists. Thus thousands of physicians all over our Southern States must for years be teaching the people how to protect themselves from yellow fever. Major Walter Reed and his colleagues proved how yellow fever is communicated, and — what was equally important — how it is not communicated; but thousands of medical men must see to it that intelligent application is made of that precious knowledge.

Recent events have brought into strong light a new function of the medical profession which is sure to be amplified and made more effective in the near future. I mean the function of teaching the whole population how diseases are caused and communicated, and what are the corresponding means of prevention. The recent campaign against tuberculosis is a good illustration of this new function of the profession. To discharge it well requires in medical men the power of interesting exposition, with telling illustration and moving exhortation. Obviously the function calls for disinterestedness and public spirit on the part of the profession; but to this call it is certain that the profession will respond. It also calls for some new adjustments and new functions in medical schools, which should hereafter be careful to provide means of popular exposition concerning water supplies, foods, drinks, drugs, the parasitic causes or

consequences of disease in men, plants, and animals, and the modes of communication of all communicable diseases. Medical museums should be arranged in part for the instruction of the public, and with some suitable reservations should be statedly open to the public. The medical schools should also habitually provide popular lectures on medical subjects, and these lectures should be given without charge on days and at hours when working people can attend. In other words, selected physicians should become public teachers, as well as private practitioners. America has much to learn from Europe in regard to this public-spirited service on the part of the profession.

In another respect the teaching of medicine must be broadened in the century we have now entered on. Medical study has been in time past far too exclusively the study of man's body by itself. Hereafter the study of medicine must be largely comparative, or in other words, must include man's relations to the animal and vegetable kingdoms. The Harvard Medical School enters into possession of its new buildings with three professorships of comparative medicine already established, the professorships of comparative anatomy, comparative physiology, and comparative pathology. This tendency to comparative study has been already well developed in other subjects, as for example, in comparative psychology, legislation, and religion. Wherever this study by comparison wins adequate place, it makes the study of the subject broader and more liberalizing, and the results obtained more comprehensive and juster. Medical students should therefore have studied zoölogy and botany before beginning the study of medicine, and should have acquired some skill in the use of the scalpel and the microscope. It is absurd that anybody should begin with the human body the practice of dissection or of surgery; and, furthermore, it is wholly irrational that any young man who means to be a physician should not have mastered the elements of biology,

chemistry and physics years before he enters a medical school. The mental constitution of the physician is essentially that of the naturalist; and the tastes and capacities of the naturalist reveal themselves, and, indeed, demand satisfaction long before twenty-one years of age, which is a good age for entering a medical school. The Harvard Medical School has derived great advantages from its requirement of a previous degree for admission; but in view of the fact that many young men procure a bachelor's degree without ever having studied any science, the School needs an additional and more specific requirement, namely, a previous knowledge of biology, physics, and organic chemistry, and an acquaintance with laboratory methods in all three subjects.

As at the preliminary stages of the medical career, so at its climax there is an increasing need of men who have a working knowledge of several sciences which were formerly treated as distinct, and whose best representatives in medical schools labored apart each in his own field. The most promising medical research of our day makes use of biological, chemical and physical science combined. Physiology advances by making applications of the principles, the methods and the implements of all three sciences. The physiologist listens to the normal or abnormal sounds in the bodies of men and animals with a modified telephone, and may record by electricity almost all the phenomena he studies. Bacteriology and biological chemistry go hand in hand in serving pathology and the public health. A great number of new chemical substances, coming from organic sources, and yet as definite and uniform in composition as salt or alum, prove serviceable in pharmacology, and in physiological and pathological research, although they were neither discovered nor manufactured with any such purpose in view. The stainings of bacteriological technic, and the quantitative color tests for characteristic ingredients in the various secretions of the body, ingredients which fluctuate in

amount in health or in disease, illustrate the present dependence of medical research on chemistry and physics. For the effective study of the toxins and antitoxins, within and without the body, the bacteriologist and the biological chemist must coöperate. Many of the effects produced by the toxins in the living body are definite chemical changes, such for instance as may be produced by the activation of certain ferments; and the antagonism of toxin and antitoxin is probably a chemical reaction. Many of the great discoveries of the future will come through the coöperation of sympathetic groups of medical scientists representing different modes of attacking the same problem. There will be a like necessity for coöperation between the clinician, the pathological anatomist, the physiological chemist, and the bacteriologist.

The world has observed, and will not forget, that some of the greatest contributors to the progress of medicine and surgery during the past thirty years have been, not physicians, but naturalists and chemists. Pasteur was a chemist, Cohn, the teacher of Koch, a botanist, and Metchnikoff a zoölogist. Students of disease must, therefore, be competent to utilize in their great task every aid which natural science can furnish. How vastly is the range of medical science and medical education broadened by this plain necessity! The dignity and serviceableness of the medical profession are heightened by every new demand on the intelligence and devotion of its members.

The recent liberal endowment of the Harvard Medical School by private persons is an indication that the more intelligent and public-spirited portion of the American people is beginning to understand that most diseases would be preventable if only mankind had acquired the knowledge needed to prevent them. The urgent duty of society to-day is to spend the money needed to get that knowledge. How to spend it we have learned — witness the admirable work of the Massachusetts Board of Health for thirty years past,

aggressive work both defensive and offensive ; witness also the remarkable results of the medical institutes both in this country and in Europe.

The medical profession of the future will have the satisfaction not only of ameliorating the condition or prolonging the life of the suffering individual, but also of exterminating or closely limiting the preventable diseases.

The Alumni Chorus sang "Laudate Dominum" with the specially composed music.

William Henry Welch, M.D., LL.D., Professor of Pathology in Johns Hopkins University, spoke upon the Unity of the Medical Sciences :

The dedication of the new buildings of the Harvard Medical School is an occasion for rejoicing, not to Harvard University alone, but to all in this country and elsewhere interested in the progress of medical education and of medical science, and in behalf of all such I beg to offer to this University hearty congratulations upon this magnificent addition to its resources for medical teaching and study. Medicine everywhere, and especially in America, has reason to be profoundly grateful to the generous and public-spirited donors who have made possible the construction of this group of buildings, unsurpassed in the imposing beauty and harmony of their architectural design and in their ample internal arrangements. This design is adapted from the Greek, and it is peculiarly fitting that the medical sciences should be housed in a style which suggests the spirit of ancient Greece, where first flowed the springs of medical science and art, living springs even to this day. In the singular harmony of the architecture of the group of buildings devoted to the various medical sciences is typified the unity of

purpose of these sciences and their combination into the one great science of medicine. What I shall have to say on this occasion is suggested in part by this conception of the unity of medical science.

The good fortune of the Harvard Medical School in coming into possession of the splendid laboratories now formally dedicated, is well merited by the leading position which this institution has held in this country since its foundation, by its union with Harvard University and by the assurance that the greatly enlarged opportunities will here be used to the highest advantage. Since the appointment, in 1782, of its first professors, John Warren and Benjamin Waterhouse, of enduring fame, this School has had a long line of honored names upon its roll of teachers, lustrous not only for such single stars as Channing and Ware and Holmes and Ellis and Cheever, but especially for its binary and even quadruple stars, the Warrens, the Jacksons, the Bigelows, the Shattucks, the Wymans, the Bowditches, the Minots; and it will not be deemed invidious on this occasion to mention of the latter group the names of two members of the present distinguished Faculty to whose services this School is so largely indebted for securing the funds for the new buildings, Professor Henry Pickering Bowditch, the eminent leader of American physiologists, and Professor John Collins Warren, who as surgeon, writer, and teacher has so worthily maintained and enhanced the ancestral fame.

The Harvard Medical School has been a pioneer in this country in many improvements of medical education; it has stood successfully in an historic city and Commonwealth for high standards of professional attainment and honor, and for just recognition of the dignity and usefulness of the profession; it has made valuable contributions to the advancement of medical knowledge and practice, and, above all, there issued from this School and the Massachusetts General Hospital through John Collins Warren,

the elder, and Samuel G. Morton, medicine's supreme gift to suffering humanity of surgical anesthesia.

This School, however, has no possession so valuable or which gives such assurance of its stability and growth for untold generations to come and of the worthy bestowal of the great gifts which were dedicated yesterday as its union with Harvard University; and it is fitting that the significance of this university relationship should be emphasized by including among the dedicatory ceremonies this academic function in the halls of this great University.

The severance of the historical union of medical school and university, leading to the establishment of a multitude of independent medical schools without responsible control, and usurping the right to confer the doctor's degree and the license to practise, is accountable in large measure for the low position to which medical education in this country sank during the larger part of the last century, and from which it has now risen in our better schools to a height which we can contemplate with increasing satisfaction. Nor would it be difficult to show, if this were the suitable occasion, that our universities on their side have suffered from the loss of a member which has brought renown to many foreign universities, and that many of the embarrassing anomalies of our collegiate system of education are due to lack of personal contact, on the part of colleges and universities, with the needs of professional, especially medical, training. There is, of course, no saving grace in a merely nominal connection of medical school and university; the union to be of mutual benefit must be a real and vital one; ideals of the university must inspire the whole life and activities of the medical department.

To have recognized fully from the beginning of his administration the importance of this vitalizing union of the medical school with the university, to have striven patiently with full grasp of

the problems and with intelligent sympathy with the needs of medicine for the uplifting of the standards of medical education, and, with the aid of his medical colleagues, to have planted these standards where they now are in the Harvard Medical School, is not the least of the many enduring services which President Eliot has rendered to American education, and, in behalf of our profession, I wish to make to you, sir, on this occasion grateful acknowledgment of this great and beneficent work.

The opening of the new laboratories of the Harvard Medical School marks the culmination, up to the present time, of an educational and scientific movement which has been the most distinctive characteristic of the development of medicine during the past fifty years and which has transformed the face of modern medicine. To have some idea of the extent and the direction of this development, consider how inconceivable would have been the mere existence of such laboratories a century ago, and how impossible it would have been for even a Bichat or a Laennec to have put them to any use or to have imagined their use. The only scientific laboratory which existed at that time was the anatomical, and this had been in existence for at least two hundred and fifty years, although not in a form which meets our present ideas of such a laboratory.

The modern scientific laboratory was born in Germany, in 1824, when Purkinje established the first physiological laboratory, thus antedating by one year the foundation of Liebig's chemical laboratory, which had a much greater influence upon the subsequent development of laboratories. As might naturally be expected, anatomical and physiological laboratories had attained a considerable development before the first pathological laboratory was founded in Berlin by Virchow. The opening and activities of this laboratory, which has recently celebrated its fiftieth anniversary, mark an era in the progress of medicine. With the exception of

the modest beginning of a pharmacological laboratory by Buchheim about 1850, all of the other medical laboratories — those of physiological chemistry, of hygiene, of bacteriology, of clinical medicine — originated at a much later date.

This remarkable growth of laboratories for the cultivation of the various medical sciences has been at once the cause and the result of the rapid progress of medicine in recent years. By teaching and exemplifying the only fruitful method of advancing natural knowledge, laboratories have overthrown the dominance of authority and dogma and speculation, and have turned medicine irrevocably into the paths of science, establishing the medical sciences as important departments of biology; by demonstrating that the only abiding, living knowledge, powerful for right action, comes from intimate, personal contact with the objects of study, they have revolutionized the methods of medical teaching; by discovery they have widened the boundaries of old domains and opened to exploration entirely new fields of knowledge, by the application of which man's power over disease has been greatly increased.

Medicine, as a science, is occupied with the systematic study of the structures and functions of the human and animal body in health, of their changes by disease and injury, and of the agencies by which such morbid changes may be prevented, alleviated, or removed. Its ultimate aim, which indicates also its method, is that of all sciences — the deduction of general concepts and laws from the comparison of the relationships and sequences of ascertained facts, and the application of these laws to the promotion of human welfare. This goal, to-day far from realization, is most nearly approached where the principles of physics and of chemistry can be applied; but there remains a large biological field awaiting reclamation for the application of these principles. The subject matter of medical study, as thus indicated, is of supreme import to mankind,

but complex and difficult far beyond that of any other natural or physical science.

The places where such study may be most advantageously carried on are laboratories and hospitals supplied with the material for study, with the necessary instruments, appliances, and books, and with trained workers. By the growth of medical knowledge the field to be covered has become so vast as to require much subdivision of labor; nor is it to be supposed that the end of this subdivision has been even approximately reached.

From human anatomy, the mother of medical as well as of many other natural sciences, there branched off in the eighteenth century physiology, and, still later, pathological anatomy. As if to replace these losses anatomy gave birth to comparative anatomy, embryology, and microscopic anatomy as more or less separate branches.

During the past century physiological chemistry and pharmacology have separated from physiology, and comparative pathology and experimental pathological physiology are asserting their independence from pathological anatomy.

Hygiene and bacteriology are of recent and more independent growth. The latter, lusty stripling, with the rise of medical zoölogy, especially protozoölogy, is seeking a more comprehensive and appropriate designation. The latest and perhaps the most significant development is the clinical laboratory in its various forms.

Specialization in scientific work should not be decried; it is demanded by the necessities of the case and has been the great instrument of progress; but the further division of labor is carried, the more necessary does it become to emphasize essential unity of purpose and to secure coördination and cordial coöperation of allied sciences. Especially urgent is full recognition of the unity and coöperation of the clinic and the laboratory.

During the last two decades we have witnessed in this country

the extraordinary rise of practical laboratory instruction from the weakest to the strongest and best organized part of the medical curriculum of our better schools. Our laboratory courses are, I believe, in several instances more elaborate and occupy more time than corresponding ones in most foreign universities.

As was emphasized by Dr. Dwight and Dr. Shattuck in their remarks yesterday, it is, however, an error to suppose that from the point of view of science any fundamental distinction exists between the clinical and the so-called laboratory subjects other than that based upon differences in the subject-matter of study. The problems of the living patient are just as capable of study by scientific methods and in the scientific spirit and they pertain to independent branches of medical science just as truly as those of anatomy, physiology or the other so-called laboratory subjects. All of the medical sciences are interdependent, but each has its own problems and methods, and each is most fruitfully cultivated for its own sake by those specially trained for the work.

There is a highly significant and hopeful scientific movement in internal medicine and surgery to-day, characterized by the establishment of laboratories for clinical research, by the application of refined physical, chemical and biological methods to the problems of diagnosis and therapy, and by the scientific investigation along broad lines of the special problems furnished by the living patient. The most urgent need in medical education at the present time in this country I believe to be the organization of our clinics both for teaching and for research in the spirit of this modern movement and with provision for as intimate, prolonged personal contact of the student with the subject of study as he finds it in the laboratory.

In addition to undergraduate instruction our laboratories at present furnish better opportunities for the prolonged advanced training of those intending to make their careers in anatomy, physiology, pathology and other sciences than are afforded by most of our

hospitals to those who aim at the higher careers in medicine and surgery. A further disadvantage is that while the former class after good scientific work may reasonably look forward to desirable positions as teachers and directors of laboratories, the latter, however high their attainments, in consequence of the separation of the medical school from any control over the appointments to the hospital staff, cannot anticipate with any degree of assurance similar promotion in their chosen lines of work, and consequently the medical faculty has not so wide a field of choice in filling the clinical chairs as in filling those of the auxiliary sciences.

The removal of these deficiencies on the clinical side of medical education in America requires some reorganization of its staff on the part of the hospital and the control by the medical school of its hospital, or, at least, its voice in appointments to the hospital staff. So far as our resources permit, we have, I think, accomplished this reform at the Johns Hopkins Medical School and Hospital. The welfare of the patient is the first obligation of the trustees of hospitals and of physicians in attendance, but nothing is more certain than that cordial coöperation between medical school and hospital best subserves the promotion of this welfare. Fortunate the hospital and fortunate the patients brought into such relations with the Harvard Medical School.

As is strikingly illustrated by the new buildings of this School, the educational machinery of medicine to-day is vastly complicated and costly compared with the simplicity of the days when a lecture room, a dissecting room, a simple chemical laboratory, and a clinical amphitheater were all that was needed. The purpose of medical education, however, remains to-day what it has always been and will continue to be — the training of the student for the future practice of his profession, and to this end in an harmonious scheme of education the various medical sciences all work together. Right action requires abundant knowledge, nowhere more so than in

medical practice ; and the all-sufficient justification for the position held by the various sciences in the preliminary and the professional education of the physician is that they furnish knowledge and discipline of mind needed in the preparation for his future work. The social position of the medical man and his influence in the community depend to a considerable extent upon his preliminary education and general culture. For this reason as well as for his intellectual pleasure in his profession and as a sound foundation for his future studies the student should enter the medical school with a liberal education, which should include training in the sciences fundamental to medicine.

The unity of the various medical sciences is manifested not only in their historical development and in their coöperation in the scheme of medical education, but especially in their contributions to the upbuilding and progress of medicine as a whole.

There is no branch of medicine or even of physical science which has not played an important part in the evolution of our present medical knowledge and beliefs. The great lesson taught by the history of this development of medicine through the centuries has been the unconditional reverence for facts revealed by observation, experiment, and just inference as contrasted with the sterility of mere speculation and reliance upon transmitted authority. The great epochs of this history have been characterized by some great discovery, by the introduction of some new method, or by the appearance of some man of genius to push investigation and scientific inference to limits not attainable by ordinary minds. The history of medicine has a greater unity and continuity and extends over a longer period of time than that of any other science.

The first clear note, which has rung down the ages, was sounded by Hippocrates when he taught the value of the inductive method by simple, objective study of the symptoms of disease, and the cry "Back to Hippocrates" has more than once recalled medicine from

dogmas and systems into sane and rational paths. Medicine, however, was handed on from the Greeks and Romans in bondage to a system of doctrine, constructed by Galen, so completely satisfying to the medieval mind that this system remained practically untouched for over a thousand years.

With the liberation of intellect through the Renaissance came the great emancipators, in the sixteenth century, Vesalius, and in the seventeenth, Harvey, the former placing human anatomy upon a firm foundation and bringing medicine into touch with the most solid basis of fact in its domain, the latter bringing to light, in the demonstration of the circulation of the blood, the central fact of physiology, and applying for the first time in a large and fruitful way to medicine the most powerful lever of scientific advance, the method of experiment.

In the century of Galileo, Harvey, and Newton, instruments of precision, as the chronometer, the thermometer, the balance, the microscope, were first applied to the investigation of medical problems, and physics began to render those services to medicine which, continued from Galileo to Röntgen, have been of simply incalculable value. The debt of medicine to chemistry began even with the rise of alchemy, received an immense increment from the researches of Lavoisier, the founder of modern chemistry, concerning the function of respiration and the sources of animal heat, and has grown unceasingly and to enormous proportions up to these days of physical chemistry, which has found such important applications in physiology and pathology.

How disastrous may be to medicine the loss of the sense of unity in all its branches has been very clearly and admirably shown by Professor Allbutt in depicting the effects which for centuries followed the casting off from medicine of surgery as a subject unworthy the attention of the medical faculty. Thereby internal medicine lost touch with reality and the inductive method

and remained sterile and fantastic until the days of Harvey, Sydenham, and Boerhaave. The services of surgery to medicine as a whole, so brilliantly exemplified in the experimental work of John Hunter in the eighteenth century, have become a distinguishing feature of the medicine of the present day.

The great awakening of clinical medicine came in the early part of the nineteenth century from the introduction of the new methods of physical diagnosis by Laënnec and from pathological anatomy. The subsequent development of scientific and practical medicine has far exceeded that of all the preceding centuries. It has kept pace with the progress, during the same wonderful century, of all the sciences of nature, and has contributed even more to the promotion of human happiness.

In anatomy, with embryology and histology, in physiology, pathology, physiological chemistry, pharmacology, hygiene, bacteriology — sciences which are ancillary to medicine and at the same time important branches of biological science — there have been marvellous activity and expansion. For physiology and the understanding of disease the establishment of the cell doctrine by the aid of botany, embryology and pathology has been the greatest achievement. By the combined aid of physiology, physiological chemistry, experimental pathology, improved methods of diagnosis and clinical study, medicine has gained new and higher points of view in passing from too exclusive emphasis upon the final stages of disease revealed by morbid anatomy to clearer conceptions of the beginning and progress of morbid processes as indicated by disturbances of function, and, above all, has penetrated to the knowledge of the causation of an important class of diseases, the infectious. As a result of this rapid growth of knowledge in many directions has come a great increase in the physician's power to do good by the relief of suffering and the prevention and cure of disease.

In this connection I wish especially to emphasize the mutual helpfulness of the various medical sciences in the development of medical knowledge and practice. Attention is generally so concentrated upon the final achievement that there is danger of losing sight of the manifold sources which have contributed to the result. Let my medical hearers consider, for example, the indispensable share of embryology, of anatomy, gross and microscopic, of physiology, of pathological anatomy, of clinical study in the evolution of our knowledge of the latest contribution to diseases of the circulatory system — that disturbance of the cardiac rhythm called "heart block." Similar illustrations of the unity of the medical sciences and of the coöperation of the laboratory and the clinic might be multiplied indefinitely from all classes of disease.

The same phenomenon is exhibited in medicine as in all science, that the search for knowledge with exclusive reference to its practical application is generally unrewarded. The student of nature must find his satisfaction in search for the truth and in the consciousness that he has contributed something to the fund of knowledge on which reposes man's dominion over reluctant matter and inexorable forces.

How readily better action attends upon increased knowledge is shown by the part which the art of medicine is playing and is destined to play even more prominently in the world's progress. The value of this work of modern medicine is to be measured in part, but only in part, by the standard applied by the average man, namely, improvement, which, indeed, has been great, in the treatment of disease and injury. It is, however, its increasing power to check the incalculable waste of life, of energy, of money, from preventable disease that places medicine to-day in the front rank of forces for the advancement of civilization and the improvement of human society. Economists and other students of social

conditions have begun to realize this; but governments and the people are not half awake, and medicine, shaking off all mystery, and with a sense of higher public duty, has before it a great campaign of popular education.

The knowledge which has placed preventive medicine upon a sound basis and has given it the power to restrain and in some instances even to exterminate such diseases as cholera, plague, yellow fever, malaria, typhoid fever, tuberculosis and other infections has come from exploration of the fields opened by Pasteur and by Koch. This power and the certainty of increasing it has given great strength to appeals for the endowment of medical research and the construction of laboratories. What is all the money ever expended for medical education and medical science compared with the one gift to humanity of Walter Reed and his colleagues of the Army Commission — the power to rid the world of yellow fever?

Great as has been the advance of medicine in the past half century, it is small, indeed, in comparison with what remains to be accomplished. Only a corner of the veil has been lifted. On every hand there are still unsolved problems of disease of overshadowing importance. The ultimate problems relate to the nature and fundamental properties of living matter, and the power to modify these properties in desired directions. Here we are far from the satisfactory *pou sto*. But knowledge breeds new knowledge, and we cannot doubt that research will be even more productive in the future than it has been in the past. It would be hazardous in the extreme to attempt to predict the particular direction of future discovery. How unpredictable, even to the most far-sighted of a past generation, would have been such discoveries as the principles of antiseptic surgery, antitoxins, bacterial vaccines, opsonins, the extermination of yellow fever or malaria by destruction of a particular species of mosquito and many other recent contributions to medical knowledge.

The activities within the new buildings of the Harvard Medical School begin at a period of medical development full of present interest and full of hope for the future, and it may be confidently predicted that they will have an important share in the onward movement, educational and scientific, of medicine.

One side of these activities will be devoted, under conditions most admirable as regards teachers, methods and opportunities, to the training of medical students and to advanced instruction. Supplemented by similar opportunities for undergraduate and advanced training in the hospital wards and dispensary these conditions will be ideal.

The inspection of these noble new buildings, however, shows clearly that those who have planned them with such care, foresight and sagacity, while recognizing fully their important educational uses, have had also another and a main thought in their arrangements, namely, their adaptation to the purposes of original research. It is this dual function of imparting and of advancing knowledge which justifies the expenditure of money and which insures a return of the capital invested in buildings, equipment and operation with a high rate of interest in the form of benefits to mankind.

The most ample and freely available facilities are an important condition for productive research, but on this creative side of university work men count for more than stately edifice and all the pride and pomp of outward life. Research is not to be bought in the market place, nor does it follow the commercial law of supply and demand. The multitude can acquire knowledge; many there are who can impart it skilfully; smaller, but still considerable, is the number of those who can add new facts to the store of knowledge; but rare, indeed, are the thinkers, born with the genius for discovery and with the gift of the scientific imagination to interpret in broad generalizations and laws the

phenomena of nature. These last are the glory of a university. Search for them far and wide beyond college gate and city wall, and when found cherish them as a possession beyond all price.

By the possession of investigators such as these, by the character and work of teachers and taught by the advancement of knowledge and improvement of practice, may this new home of the Harvard Medical School be a center for the diffusion of truth in medicine, the abode of productive research, a fortress in the warfare against disease, and thereby dedicated to the service of humanity.

The Alumni Chorus sang "Great is Jehovah," by Schubert-Liszt.

Harold Clarence Ernst, M.D., Professor of Bacteriology, presented the Roll of Delegates.

DELEGATES PRESENT :

The Albany Medical College : DR. SAMUEL B. WARD.

The University of Birmingham : PROF. R. F. C. LEITH.

The Medical School of Maine (Bowdoin College) : DR. ALFRED MITCHELL.

The Boston University School of Medicine : DR. F. C. RICHARDSON.

Tufts College Medical School : DR. HAROLD WILLIAMS, *Dean*.

The University of Cambridge : PROF. G. SIMS WOODHEAD.

The University of Cincinnati : DR. F. FORCHHEIMER, *Dean*.

The University of Chicago (Rush Medical College) : DR. H. GIDEON WELLS.

Western Reserve University : DR. DUDLEY P. ALLEN.

Dartmouth College Medical School : DR. WILLIAM T. SMITH, *Dean*.

The University of Edinburgh : DR. HARVEY LITTLEJOHN.

Grossherz. Bad. Albert-Ludwigs Universität, Freiburg i. Br. : PROF. FRANZ KEIBLE.

R. Istituto di Studi Superiori, pratici e di perfezionamento-sezione di medicina e chirurgia ; Firenze : DR. CHARLES S. MINOT.

The University of Glasgow : PROF. JOHN GLAISTER.
 Université Laval : SIR WILLIAM HINGSTON.
 McGill University : PROF. FRANCIS J. SHEPHARD.
 University College, London : SIR THOMAS BARLOW.
 The University of London, St. George's Hospital : DR. WILLIAM EWART.
 The University of Liverpool; The Liverpool School of Medicine; The
 Liverpool School of Tropical Medicine : PROF. C. S. SHERRINGTON.
 Long Island College Hospital and Medical School : DR. J. S. RAYMOND.
 The University of Manitoba : DR. SWALE VINCENT.
 Instituto Medico National, Mexico : PROF. SR. DR. DON JOSÉ RAMOS
 and SR. GEORGE R. SHAW.
 The University of Michigan : DR. REUBEN PETERSON.
 Yale University : DR. W. H. CARMALT.
 Columbia University : DR. SAMUEL W. LAMBERT, *Dean*.
 New York Post-Graduate School and Hospital : DR. GEORGE N. MILLER.
 Cornell University, Medical Department : DR. WILLIAM M. POLK, *Dean*.
 Northwestern University, Medical Department : DR. N. S. DAVIS, *Dean*.
 Tulane University : DR. J. D. WEIS.
 University of Pennsylvania, Medical Department : DR. CHARLES S.
 FRAZIER, *Dean*.
 Jefferson Medical College : DR. J. W. HOLLAND, *Dean*.
 Washington University, St. Louis : DR. ROBERT J. TERRY.
 Syracuse University : PROF. GAYLORD P. CLARK.
 University of Toronto : PROF. R. A. REEVE.
 University of Vermont, Medical Department : PROF. A. F. A. KING.
 Georgetown University, Medical Department : PROF. GEORGE M.
 KOBER, *Dean*.
 George Washington University, Washington : DR. HENRY C. YARROW.
 Clark University, Worcester : PROF. LOUIS N. WHEELER.

Congratulatory parchments, letters, and telegrams were received
 from

The University of Aberdeen.
 The University of Bengal.
 The University of Berlin ; Königl. Friedrich-Wilhelms-Universität.
 The University of Bologna ; Regia Università degli Studi.

- The University of Bonn ; Rheinische Friedrich-Wilhelms Universität.
The University of Buffalo.
The Medical Faculty of the University of Christiania ; Kongelige Frederiks
Universitet.
The Medical Faculty of the University of Giessen ; Grossherzogl. Hessische
Ludwigs Universität.
The University of Greifswald ; Königliche Universität.
The University of Halle ; Vereinigte Friedrichs-Universität Halle-Wit-
tenberg.
The University of Heidelberg ; Grossherz. Ruprecht-Karls-Universität.
State University of Iowa.
The University of Kiel ; Königl. Christian-Albrechts-Universität.
The Imperial University of Kolosvar.
The University of Königsberg ; Königl. Albertus-Universität.
The University of Lausanne.
The University of Leipzig.
The University of Liège.
The London Hospital Medical College.
The Middlesex Hospital Medical School.
The Imperial University of Moscow ; Imperatorskij Moskovskij Univer-
sitet.
L'Institut Pasteur.
The University of Prague ; K. K. Deutsche Karl-Ferdinand-Universität.
Imperial Military Academy of Medicine ; Imper. S.-Peterburgskaja vojenno-
medicinskaja Akademija.
The University of Strassburg ; Kaiser-Wilhelms-Universität.
The University of Texas.
The Medical Faculty of the University of Tübingen ; Königl. Eberhard-
Karls-Universität.
The University of Tomsk ; Tomskij Universitet.
The University of Upsala ; Kungl. Universitetet i Upsala.
The American Medical Association by its President, Dr. W. J. Mayo.
Prof. William Osler.
Prof. Wilhelm Waldeyer.

The President of the University then conferred these honorary degrees :

In accordance with time-honored University usage on occasions of rejoicing, I now create, in exercise of authority given me by the President and Fellows and the Board of Overseers,

HONORARY DOCTOR OF ARTS :

CHARLES ALLERTON COOLIDGE, architect, designer of admirable buildings for academic and scientific uses in California, Illinois, New York, and Massachusetts ; designer of the monumental new buildings of the Harvard Medical School, buildings in which are combined spaciousness, splendor of material, fine grouping, durability and careful adaptation to their special uses ; through professional skill and patience an influential promoter of the purposes and wishes of the Medical Faculty ;

HONORARY DOCTOR OF SCIENCE :

SIMON FLEXNER, born and brought up to the standing of a physician at Louisville, Ky. ; trained as a student and professor of pathology chiefly at the Johns Hopkins University ; productive investigator and author in bacteriology and pathology ; since 1904 Director of the Laboratories of the Rockefeller Institute for Medical Research, and there the competent master of great resources for the immediate and constant advancement of Medical Science ; and

DOCTORS OF LAWS :

JOHN COLLINS WARREN, Instructor and Professor of Surgery in Harvard University for thirty-five years ; author, and eminent practitioner in surgery ; the enthusiastic, winning, and indefatigable promoter of the great undertaking of the Medical School, who knew how to inspire others with his own well-grounded hopefulness and ardor.

HENRY PICKERING BOWDITCH, for thirty-five years chief teacher of physiology in Harvard University; for ten years Dean of the Medical School; investigator, as well as teacher and administrator; whose imagination conceived, whose faith foresaw, the new Medical School, and who contributed to the realization of his vision by diligent labor in the cause and through the confidence which others felt in his foresight and sagacity.

JOSÉ RAMOS, Professor of Pathology and Chief of the Clinical Staff in the Medical School of Mexico, Officer of the Medical Institute of Mexico, Senator from the State of San Luis Potosi, in whose welcome presence Harvard University gladly remembers that the University of Mexico was her elder sister on the American continent.

FRANZ KEIBEL, Professor of Anatomy in the University of Freiburg, eminent investigator in anatomy and embryology, worthy representative of German genius for medical research and teaching.

CHARLES SCOTT SHERRINGTON, Lecturer and Professor at the University of London, St. Thomas's Hospital, and the University of Liverpool; distinguished experimental physiologist, and especially neurologist; public spirited and active member of famous scientific societies and serviceable medical organizations.

FRANCIS JOHN SHEPHERD, Professor of Anatomy in McGill University; Canadian by birth, education, and service; distinguished surgeon; active contributor to professional literature; ready sharer in the public functions of the profession, and in its works of charity and good-will.

SIR THOMAS BARLOW, Professor of Clinical Medicine, physician to his Majesty's household and to University College Hospital; eminent general practitioner and consultant.

ABRAHAM JACOBI, a medical graduate of Bonn University in 1851, and a practising physician in New York since 1853; professor of the diseases of children since 1860; officer in many

hospitals and medical societies ; productive author ; alert, energetic, progressive practitioner ; honored medical veteran.

And in the name of this Society of Scholars I declare that they are entitled to the rights and privileges pertaining to their several degrees, and that their names are to be forever borne on its roll of honorary members.

The Alumni Hymn was sung by the Alumni Chorus and the Audience.

The Rev. Francis Greenwood Peabody, Dean of the Faculty of Divinity, pronounced the benediction :

The Lord God Almighty bless us, preserve us, and keep us ; the Lord with His favor look mercifully upon us and be gracious unto us ; the Lord lift up the light of His countenance upon us and give us peace and truth and hope and faith to-day and evermore. AMEN.

After the exercises in Sanders Theater the President and Fellows held a reception in Phillips Brooks House for their guests and ladies.

At two o'clock the Harvard Medical Alumni Association gave a dinner in Memorial Hall at which were present the guests of the University.

The arrangements for the Dedication were in charge of a joint Committee of the Corporation and of the Faculty of Medicine made up as follows :

DR. HENRY PICKERING WALCOTT,
DR. ARTHUR TRACY CABOT, on the part of the Corporation,
DR. JOHN COLLINS WARREN (Chairman),
DR. WILLIAM LAMBERT RICHARDSON (Treasurer),
DR. HAROLD CLARENCE ERNST (Secretary), on the part of the Faculty of Medicine.

SUB-COMMITTEES :

In charge of accommodations for guests : DR. CHARLES HARRINGTON.

In charge of the exercises on the first day : DR. JOHN WARREN.

In charge of the afternoon tea : MR. J. GRAFTON MINOT.

In charge of the exhibits in the buildings : DR. FRANK BURR MALLORY.

In charge of the arrangements for the second day : MR. JEROME DAVIS GREENE.

Marshal for the second morning : DR. JOHN LEWIS BREMER.

Choir-Master : WARREN ANDREW LOCKE.

