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THE NEXT TWENTY YEARS[1]

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INTRODUCTION

THANKS to the new understanding which has pervaded American medicine during the last forty years, the dedication of a great hospital becomes at the same time the foundation of a new educational institution. For of all the beneficent changes which have come with the reorganization of medical education, the home-coming of the schools and hospitals to shelter under the wings of the universities is perhaps the most significant and important. By this, medicine has taken its rightful place as the science of human biology in which the laboratories form the bridge over which thought and method of the fundamental sciences find their way to the arts of the clinic and the operating room. Here in these splendid buildings, in the coming years, countless thousands will find comfort and relief from pain, new hope and the postponement of sorrow. And the old traditions of our profession will be upheld, to apply our wisdom and our best skill to all who may have need of them, regardless of the trivial differences which, under all other circumstances, keep men distrustful and apart. But here, too, the ranks of our profession will be renewed, year after year, with younger men, wiser than we—if wisely you train them; stronger in purposes of kindness and human understanding; learned as we could not be, and more skillful.

In all human affairs there is a curious lag between the acceptance of high principles and the application of such understanding to practical purposes. In politics, to realize this, one need only sit in the gallery of Congress and remember that Plato wrote "The Republic" 2,400 years ago. In religious thought we are nineteen hundred and thirty-one years along, and it is best not to say anything more about it. In medicine, the dependence of progress on the disciplines of chemistry, physics and biology has been impressed upon us since the beginnings of the 19th century; and only now are we finally organized, within great universities, as a technical branch of learning, where

[1] Address given at the dedicatory exercises, the new Lakeside Hospital, Cleveland, Ohio, June 17, 1931.

medicine can be carried forward on the currents of thought which flow from the fundamental sciences.

The real beginning of this new spirit, for America, was made in 1876, when Huxley, at the dedication of the Johns Hopkins, defined the cooperation between universities, medical schools and hospitals, more or less in the form in which these principles are now accepted, after many delays and false starts. Indeed, they have needed so much vigorous reiteration of recent years by Mr. Abraham Flexner that, had not Huxley died when Mr. Flexner was a youth, we might say that in this particular aspect of the problem, by a sort of prophetic inspiration, Huxley had taken the words out of Mr. Flexner's mouth. As it is, we can say that Huxley is great, and that Mr. Flexner is his prophet! I say these things in all admiration, for, having differed in many things from this prophet in the past, now that the smoke of battle is blowing away in the breezes of a new day, I see how much on the whole we owe him as a valiant combatant for first principles.

During the last twenty years we have passed through our period of storm and stress, but they are over and we can say: "The Golden Age which a blind tradition has hitherto placed in the past is here and now before us." Of 166 medical schools which existed in 1910, about 66 are left to-day. And these are educating a sufficient complement of doctors for the needs of our nation, incomparably better in quality than their predecessors. The competence of our faculties, the selection of our students and, above all, our material resources have improved at a rate which no other educational movement has ever experienced in an equal period. Indeed, in regard to physical equipment, those of us engaged in the quiet pursuit of our professions have often listened, with wistful though admittedly short-sighted consternation, to the clattering of the golden cloudbursts on the roof, knowing that they would call us away from our test tubes and microscopes to blueprint and catalogue.

But we are approaching the end of the period of rapid expansion. There will no doubt be other dedications of needed hospitals and medical schools after this one, and though development will not suddenly cease, it will assume a slower tempo. We can look forward, in the near future, to a period of increasing stability during which we must grow into our enlarged opportunities by a greater generosity of effort. The fields of our endeavors have been fertilized with a beneficence and a public confidence unheard of in the history of education. It is the privilege of those of us, who are for a short time their tenants, to till them for the future harvests. And the time has come when we must stop to consider that the problems confronting us demand qualities and methods different in many respects from those most important during the transitional period of growth. The last twenty years have been given to the forging of our tools. During the coming twenty we must learn worthily to wield them.

II

It is with some trepidation that I venture to speak first of questions of administration. The specialist is expected to stick to his last, and the ideal professor is usually regarded as the one who sits in the institutional corner assigned to him, pulling out scientific plums and being otherwise a good boy. But it is apparent even to the academic Jack Horners that the time-honored conception of universities as democracies of scholars—everything else being subsidiary—has changed.

It would be stupid to under-estimate the value of sound administration. It would be ungrateful to withhold acknowledgment for the tact and ability with which unselfish men, often themselves talented scholars, have given their strength wholly to administration during the emergency period. It was natural that adjustment and change should have led to a concentration, in the hands of administrators, of powers which, in times of normal academic development, were lodged in those of the scholars. It was not only natural, it was probably a necessary condition without which the new progress could not have been achieved. But, recognizing this, we should also understand that, with the subsidence of the emergencies of organization, a certain amount of administrative demobilization must be undertaken. When, in a previous address, I insinuated that in our institutions of learning the administrative tail was beginning to wag the academic dog, I was mildly admonished as "captious and unreasonable" by a friendly critic from one of the foundations, who wrongly inferred that I was alluding to the power of the hand that held the purse strings. This power undoubtedly exists, and must probably continue to exist, but it has never, in my own experience, been abused in intra-academic relations. The problem is more subtle than that. Business management there must be, and in such affairs the true administrator is the most valuable guide and adviser a sensible faculty can possess. Deans there must be as well; but a leader in the scholastic sense and an administrator in the sense of material efficiency are not hatched out of the same egg. As Mr. Flexner says: "Efficiency in administration and fertility in the realm of ideas have nothing to do with each other." The budgets must be balanced and this is one function. But educational initiative, influence over appointments, policies of curriculum and university relations are another, which require leadership of another sort, the qualities of a scholar among scholars. If we are to succeed in the coming period of intel-

lectual ripening as we have—thanks to temporary centralization of power during that of material expansion—the two functions must again, to some extent, be separated, and the purely administrative mechanism be carried out mechanically, as is its nature, subsidiary to and under the guidance of leaders whose interests and hearts are primarily with education and sound scholarship, secondarily with management.

For the guidance of an institution the success of which depends upon the imponderable values of spirit and intellect is not the mechanical driving of a machine made of iron and steel. It is more like the riding of a thoroughbred, an organism with a nervous system and a temperament. Any one with strong legs can stay on. But the riding is in the lightness of the hand and the feeling of being one with the horse. We must find our way back, or part way back, to the older conception of academic leadership, avoiding the estrangement between faculty and management which these feverish days of reorganization have threatened to establish. That this can be done without radical changes or great struggle I confidently believe, for it is more a change of point of view than one of actual method. Indeed, in some of the more rapidly stabilizing institutions the force of intellectual tradition is automatically bringing it about. And while the distinction I make appears nothing more than a trivial shifting of emphasis to some of my administrator friends, it is this type of subtle difference that distinguishes the fine from the commonplace in men and in institutions. And the quality of American medicine in the future will, to a large extent, depend upon the decisions we reach now in regard to scholarship and administration, which is to lead and which to follow.

That a solution for this problem is not impossible is apparent in the manner in which, for several hundred years, the German universities have managed to run smoothly under a system of rotating rectors and deans who remain integral and often distinguished members of the teaching force, while the mechanics of institutional government keep the engine in even motion, without exerting any pressure whatever upon scholastic matters. To a certain degree, also, it seems to me, a similar system has from the beginning been not unsuccessful in the Johns Hopkins Medical School. The supervisional influence exerted in the German institutions by the ministry of education would automatically be supplied, with us, by the central university authority.

I feel hopeful, therefore, that in spite of our national overemphasis upon administrative perfection, a simple way can be found to keep our medical schools and hospitals under the intellectual guidance of those most competent to run them, without in any way sacrificing that minimum of orderly management which, like an automobile engine, is most effective when it is least audible.

III

As we approach a state of reasonable stabilization, moreover, and the immediate need of powerful financial support becomes less pressing, it is to be hoped also that there will be a permanent and normal adjustment of the relationship between institutions of learning and the great foundations. These have entered the educational world as a sort of fourth estate, a distinct contribution of American benevolence to the history of education and, so far, almost uniquely American. Except for relatively few institutions, the present favorable conditions of medical schools would have been impossible without them. Their influence has been of incalculable benefit, not only by their splendid munificence but, to an almost equal degree, by their initiation of the serious study of educational methods, critical analyses and suggestions for reform. That Bulletin No. 4 of the Carnegie Reports by Abraham Flexner was the catalyst which started the fermentation that converted the sour state of affairs of 1910 into the clear and strong situation of to-day, no one can sensibly question. But there is equally no doubt that new and important problems have resulted from the creation of a power entirely independent of the organized educational system and capable of great influence over this system by the control of enormous funds. When I expressed this view in 1927, disagreement came from many directions. But after all, we have at the present time some measure by which we can estimate whether or not there was just reason for my apprehensions. The question which ten years ago agitated medical education most violently was that of the "full-time" or "part-time" direction of teaching clinics. The subject was discussed *ad nauseam*. Francis Peabody, in his published letter to Longcope, "The Soul of the Clinic," says: ". . . I have become as tired of the discussions of full-time teaching as I am of discussions of the 18th Amendment." And that the sheep were not all on one side and the goats on the other is clear from the subsequent paragraphs, written by this—perhaps the greatest of the younger leaders of clinical medicine of that time. Yet to-day the medical schools of the following universities—Johns Hopkins, Washington University of St. Louis, Yale, Columbia, Chicago, Cornell, Vanderbilt and Iowa—all of them considerably endowed by the Rockefeller Foundation, have adopted the full-time system more or less in the form advocated by some members of this foundation and opposed by many leaders of the medical profession and by not a few administrators. This may of

course be due to the fact that these institutions have all recognized the greater wisdom of the plan. To some of us, wavering in our belief in Santa Claus, it would appear at least not impossible that willingness to adopt an educational policy may in some cases have been subconsciously influenced by the knowledge that such receptiveness to a new idea could, over night, convert an institution struggling to keep its head above water into an affluent one possessing all the material tools for fine performance and future expansion. Accurate controls in this reasoning—which, as a bacteriologist, I would desire—are lacking, since I know of no institutions that have been offered the money and have refused it. But, on the other hand, I know of others that now have neither the full-time system nor the money.

I have no intention of implying by this that the accepted plan is not an excellent one, though I am strongly of the opinion that it is not likely to produce authoritative figures in clinical medicine comparable to Strümpell, Nothnagel, Neüsser, Kraūs, Friedrich Müller, Widal, Osler, Janeway, Delafield, Shattuck and Walter B. James. Neither do I wish to imply that the motives of the accepting institutions were mercenary ones since, as a reaction to the methods of the old proprietary medical school and as a rigid experiment toward the scientific developments of the clinic, the plan did and does recommend itself to many serious students of medical education. I wish to illustrate by these considerations merely that the indirect power of foundations to stimulate fundamental changes in an educational system is a great one, and that the decisions and opinions of self-perpetuating boards of foundations may determine policies in the most important department of civilized society—namely, its educational system. And it appears to me unlikely that, except by occasional fortunate accident, the judgment of foundation administrators on educational problems can, in the long run, be as wise and sound as that of the teachers who are active in the universities and in whose hands responsibility for the development of this phase of our national life must remain.

As a matter of fact, I have a feeling that time will adjust these difficulties automatically. Permanent agreements between donor and recipient are improbable, and there will be no reason, therefore—as the necessity for financial assistance becomes less pressing—why the universities should not gradually grow away from tendencies they consider erroneous, and again develop naturally, without extraneous influence. And we must grant the gentlemen of the foundations that they are doing their best to draw into their deliberations the wisest consultants they can obtain.

Most of them would probably agree with the view that the future usefulness of the great foundations will greatly depend upon the establishment of a relationship in which, while retaining the power to grant or refuse assistance to specific requests, the foundations will neither directly nor indirectly wield any influence over the initiation of academic policy or over university appointments or investigations.

Granting that such a relationship can be brought about, American education will be enriched beyond that of any other country, by the benevolent impulses that have led to the establishment of foundations.

IV

It takes three or four years to erect a great group of buildings. It takes thirty years to train an investigator or teacher and ten more to ripen him into distinction. It was inevitable that the most difficult problem of our sudden aggrandizement should be that of giving the breath of life to our new institutions with men and women capable of doing them credit. But things have not gone too badly with us in this respect. The gods who take care of children and democracies gave us a few leaders in the dawn of our critical period whose influence guided us when the emergency arose. The pupils of Osler, Delafield, Janeway, Mall, Huntington, Jacobi, Halsted, Shattuck, James, Vaughan and some others have filled the chairs of most of our important schools. Welch, Howell, Abel, Simon Flexner, Hektoen and Theobald Smith are with us still. Under their direct teaching and influence we have drawn freely on the great schools of Europe and have made much of their methods and wisdom our own. To be sure, under the pressure of the transitional period, many brilliant young scholars were sacrificed on the wheels of organization, interrupted in the best years of early production and set to work developing great departments. The younger Ostwald is reported to have said of this: "When the Americans discover that a man is superbly fitted for some type of scientific work, they reward him with a position in which he can no longer pursue it." Deplorable as this has been, it was both inevitable and sound, since it followed the principle that no one can properly direct a department who is not professionally competent in the subject with which it deals. And time will correct this by the simplification of administrative intricacies as stabilization proceeds. Nevertheless, our most difficult problem is still this one of personnel, and it will probably take another decade before the supply of highly trained teachers, clinicians and investigators is adequate for the needs of our new institutions. And to meet this need is one of the highest responsibilities faced by those of us who are privileged to play a small part in this development.

Meanwhile, the reproach is still heard that our best schools are training poor investigators instead of good doctors. In a modified form this complaint is an old one. Francis Bacon says: "Physicians are, some of them, so pleasing and conformable to the humor of the patient as they press not the true cure of the disease; and some others are so regular in proceeding according to science for the disease as they respect not sufficiently the condition of the patient. Take one of a middle temper, or, if it may not be found in one man, combine two of either sort." What the new medical teaching is trying to accomplish is to train for the "middle temper," in which neither the pleasing art nor the procedure according to science shall be neglected.

But the reactionary voices are growing feebler as the quality of our present graduates is being appraised. It is more generally acknowledged that, in a rapidly changing science, the two activities, investigation and teaching, are inseparably linked. True teaching is what Carlyle called "Thought kindling." "How can he teach," he exclaims, "who has no live coal within him, but is all burnt out to a grammatical cinder?" It is true, of course, that occasionally great teachers have made few original contributions. But such men have usually approached their subjects by a method of sifting the right from the wrong which, in itself, is a sort of research into true understanding, and in this way have founded schools of investigation. There have been many of these indirect investigators in the history of medicine. In our own country there have been Osler, Welch and some others who have signed many of their important contributions to the medical sciences with the names of innumerable pupils whose minds were the materials on which they carried out their experiments. There are others at the opposite ends of the scale, to whom the classroom and the student laboratory is an annoying disturbance, and who must hunt alone. But even the greatest of these have pupils and assistants. Only, their methods of teaching take a different form and reach a smaller number of more highly specialized minds. Between the two extremes are the larger number of men and women who are talented investigators and who take keen pleasure and profit from contacts with younger associates intent on similar purposes.

For all these there is room in the modern medical school and hospital. There is no room, however, for those to whom the act of instructing is a mechanical thing; who are content to shuck down to the feeding herd the dry hay of old harvests. For medicine, like all biology, is in a strange stage of development at which the pupil is often wiser than his master. Few men on the faculties, except perhaps a small group of the biochemists, are as well grounded in the fundamental contributory sciences as the most gifted of their students. To do our difficult duty to these disciples we must remain students ourselves and be capable not only of telling them what is known to-day, but of pointing out to them the goals they may attain which a too short life has placed beyond our reach. We must teach beyond ourselves. "Über dich hinaus sollst du zeugen," as Nietzsche said. If we perform our allotted tasks in this sense, these young men and women will gain from us not merely the meager store of to-day's understanding but, from our curiosities and our laborious efforts to conquer a little of to-morrow, they will gather velocity to carry them farther than we can hope to go. Less than this is not true teaching.

And it is at the present stage of our development that this type of relationship between teachers and the taught is of particular importance. The rapidity with which the exacter sciences of chemistry, physics and mathematics are penetrating medicine makes collaborators of the experienced biologist and the younger student who comes fresh from the fundamental laboratories. As much error can be committed by the premature attempt to apply exact mathematical reasoning, accurate enough in simple systems, to the complex processes of living matter, as by neglecting available physico-chemical knowledge in the biological approach. The two methods are dependent upon the same kind of reasoning. But while the more exact sciences gain much of their information by creating their own conditions of study in systems sufficiently simple to permit absolute conclusions, nature fixes the conditions which the biologist must investigate. It is only when, by his trial and error experimentation, he has isolated a set of phenomena that the chemist or physicist can profitably take hold. It is more important than ever before, therefore, that teachers and pupils should regard themselves as overlapping, consecutive generations of students whose relationship must be, for the service of knowledge, quite different from that of the old pedagogic one of less actively advancing eras.

Of course there are certain cornerstones and retaining walls of accepted fact that must first be laid. This is, or should be a simple mechanical affair—easily arranged. Real teaching begins at the jumping-off place.

V

But in this matter of research there is still much that awaits adjustment. The very point of view which I have expressed has placed a premium on the mere activity of investigative effort regardless of its intelligence or results. We have developed the habit of judging men for positions by the perusal of the titles of their publications, and a list three pages long is more formidable than one of a few lines. There is

also a peculiarly sensational and sentimental appeal in medical discovery, and we are living in an age in which cheap performance, skilfully vulgarized, may have an enormous advertising value. And institutional rivalry, bidding for support, has had a tendency to foster the submission of results to public and inexpert applause before they have been passed upon in the rigid forum of technical criticism.

There has been, in consequence, a hot-house forcing of medical investigation which, together with some very brilliant and useful growth, has nourished the weeds of much second-rate material. There has also developed a curious halo about research which has exalted it above other and, in the absence of talent, more useful and less expensive methods of occupying time.

These tendencies have been further intensified by the strange circumstance—peculiar to our present development—that, for the time being, available funds have often outstripped our abilities to use them wisely. In the fields of cancer and tuberculosis particularly, high-minded philanthropists have hoped that money could engender ideas, instead of being merely the fertilizer which can aid the sprouting of the living seed of a thought. For this reason, to-day, much work is undertaken merely to justify expenditure; and, in well-equipped laboratories, many a man and woman is patiently sitting on a lifeless idea, like a hen on a boiled egg, or is spending time and money transposing into complicated notations old tunes that have been adequately played in C major.

Undoubtedly a certain amount of such gnawing at dry bones is inevitable, since pedantry—not strong enough to shove a spade into the rich soil of new fields—has ever been attracted to the dust-bin. And also there must be trial and error in regions of thought in which the unknown is so vast compared with the narrow paths of the known. And the most intelligent endeavors may lead into blind roads from which retreat is the only return to the highway.

To reduce such waste to the necessary minimum, and to prevent the vulgarization of science by the introduction of a spirit of rivalry and réclame is largely the responsibility of all of us, old and young, who are privileged to cooperate in hospitals and schools. It is not only a matter of teaching and studying in the manner which I have indicated, nor is it entirely one of doing our own work honestly and with modesty. It is necessary, in addition to this, to maintain a strong consciousness of the dignity of this type of occupation and freely to encourage into it only those of whose talents and training, and above all, of whose reverence for truth we are convinced. Especially must we not lose the spontaneity of our reactions of joyous admiration for a good job well done by another, and of contempt for cheap performance. Finally, though abandoning none of our critical faculties, we must be extraordinarily careful not to become so academically conservative, as our vessels grow harder, that we extinguish, with a flood of doctrinaire convictions, young thoughts too original and foreign to accepted theory for our own ready comprehension.

This part of it is the task of those of us who are working in the ranks—a heavy one and a difficult program in which few of us can hope entirely to succeed. In this regard, however, we may look into the future with confidence, because in a constantly increasing number of the newly organized institutions there are growing up groups of younger men whose training has been far sounder than our own and whose standards are certainly as high.

But there are other factors involved in the situation which are at least of equal importance, and which, with the passage of time and stabilization, will have a decisive influence. When buildings and equipment have been provided with a splendor sufficient to satisfy the most chauvinistic local pride and the ambitions of executives, the funds which subsequently become available will, let us hope, be freed for the development of the flesh and blood of universities—men and budgets. And may the wise administrator be wary of accepting funds for special projects dear to the hearts of donors—cancer, tuberculosis, institutes of human relations, eugenics, etc.—and encourage the accumulation of unrestricted gifts. Scientific thought, like poetic inspiration, must be allowed to circle indefinitely, like a carrier pigeon, to find its own direction of flight. We believe that in many American institutions large funds are relatively sterile because they can be used only for definite purposes in which progress, impossible for the time being, awaits ideas and methods not yet available. And the great strength of Trinity College, in Cambridge, would seem to lie in its command over large and unrestricted resources with which it can permanently support a group of mature and distinguished scholars who can explore wherever the trails of curiosity lead them.

Let us not forget that Archimedes had the idea of specific gravity while taking a bath; that Descartes was lying in bed when he evolved coordinate geometry, and that Isaac Newton—though I don't believe it, is said to have drawn deep deductions first in an apple orchard. On the other hand, I do not wish to be misunderstood as meaning to sponsor the policy that universities should pay men large salaries for taking baths, lying abed and drowsing under apple trees.

VI

Devotion and good sense are not lacking in our in-

stitutions and many of the matters of which I have spoken are growing pains which will not, if recognized early and energetically treated, affect our hearts. Our great asset is the increasing number of young men and women, who in a commercial age and in a country of wide opportunity are offering themselves for our work. Partly, this is due to the higher type of pre-medical education, partly to the careful selection of material by medical schools, and again to the cultivation of that type of teaching which I have outlined. Also, however, I feel confident, it is due to the growth of a spirit of enthusiasm and idealism in many of the present generation of students which is perhaps one of the wholesome reactions against the exaggerated materialism of the last twenty years. Our responsibility then is not only to train and select but also to create conditions which will hold the enthusiastic and talented in the clinic and the laboratory. This is to a large degree already attained by the opportunities for work that our new institutions provide. To a greater degree, however, it is also an economic question. And this brings me to the sordid problem of salaries.

The complaint that we can not expect to recruit the best brains of the country into academic life, owing to the meager economic future offered in these occupations, is to some extent justified in fact. Not so long ago science in America was a calling at which one could not make a living until after death. Conditions have rapidly improved and should still improve considerably, especially in the cases of the middle grades—mature men and women who should not be forced to leave important work in well-organized places merely because only one living salary is provided in the budget for the director of the department. But unfavorable comparisons of academic remuneration with the enormous incomes of industrial administrators, corporation lawyers and bootleggers are quite beside the point. The answer of the future will perhaps be that the incomes of scientists will moderately increase, but surely that the exaggerated wages of some other occupations will diminish. For an academic salary of ten or twelve thousand dollars is a more normal social phenomenon than one of a hundred thousand for the manufacture of chewing gum or the authorship of a romantic advertisement for a mouth wash. This is a matter of opinion. It is an easily calculable fact, however, that the universities can never hope to compete with business or the practicing professions in this respect, simply because there is not enough money in the country to make this possible. Though in a few instances attempts seem to have been made in this direction in order to "put over" the full-time clinical plan, I believe this to be an abnormal phenomenon of artificial development which will pass with another generation. But were it possible for universities to enter in this financial competition for brains, would it be necessary or even desirable?

It is just, of course, that academic pay should be respectably adequate to provide the legitimate needs of a cultivated family of moderate size. There is such a thing, however, as being civilized beyond the necessity of great wealth. And those who have attained this level of personal civilization know that they must choose in the sense of the Chinese philosopher Yang Hon, who said: "The man who thinks only of amassing riches is not humane; and he who thinks only of leading a humane life shall not be rich."

There are passing through the hospitals and universities of this country more youngsters who subscribe to this doctrine than any one knows except those of us who are daily at work with them. Most of them have thought it over and come to the conclusions which Carlyle paraphrases from Confucius: "If the search of great riches were certain of success—though I become a groom with whip in hand to get them, I will do so. As the search may not be successful, I will follow after that which I love."

The temper of that type of mind which is attracted to the sciences and the arts is usually emancipated from the obsession for quick riches which other occupations are so apt to strengthen. These young men and women that come to us in annually greater numbers are attracted to our calling because a higher type of training and better opportunities for work have aroused their spirits. They have no ambition for great financial success. They are willing to forget about this entirely if they can be offered rewards sufficient to permit them to live lives of normal human relations—marriage, children, books and the pride of economic independence—not only after middle age has brought recognition, but in the formative and most productive years—which now are the most trying and full of disturbing anxieties. All this—and it is not expensive—is within the possibilities of the financial resources of our present university medical schools. And, given this, there are more of these young men and women of force and ability than most people know, who deliberately choose the great adventure of trying to write something of themselves by their own work and thoughts into the records of time.

And, in our profession, in addition to the intellectual appeal, there is the legitimate one of a humane impulse—directly or indirectly to aid in alleviating sorrow and sickness and even, by some fortunate combination of chance, labor and clear thinking, once in so often to parry the scythe of death.

We are confronted with many problems and many

responsibilities for these coming twenty years. But the last twenty have put the tools into our hands. We need have no fear of failure if we remain sturdy in our trusts and put our faith in the younger generation.

And here in Cleveland you are again expressing this vigorous faith in the future which has characterized the entire history of the Western Reserve—a faith which inspires the undertaking of great beginnings which you know will be carried on eventually by younger hands in the high spirit with which they were begun. In this great and splendid institution, in which all the humane and benevolent forces of your city are cooperating you will solve all the problems that may arise from the rapidity of development which renders our own era of medicine a difficult but a particularly fascinating one. You may, at times—with all of us—fail to strike that delicate balance between the practical things of life and the more intangible qualities of spirit and intellect, which must be found in order that our profession may continue to perform its full functions in the service of civilization. These temporary fluctuations which occur in all difficult human undertakings are like the swinging from right to left of a vessel in the wash of a heavy sea—but they make no deviation from the eventual true course when wise and vigorous hands are on the wheel. You know where you are going, your course is charted, and you have already a great tradition to drive you forward.

Of few things can we foretell the future. In these days of world transformations no one can foresee the events that are to come. No man can much affect them except by lifting his hand and mind honestly to the tasks that lie immediately before him. But in this is our profession more blessed than all others. Whatever the changes or trials that an uncertain future may hold, nothing can alter the intrinsic purposes of medicine, the very definition of which must be stated in words of action, to increase in wisdom and skill for the relief of suffering and the solace of sorrow—to serve men, their bodies and their minds—indiscriminately in a spirit that transcends social, racial and national distinctions. In all the rivalries and hatreds and mutual distrusts that hold the political and economic world in a grip of terror, medicine has no part. It is the one activity that, through these years of upheaval and revaluation of ideas and institutions, has had no need to alter its standards or its aspirations; it has known no enmities and recognized no national boundaries. Epidemic, sickness, physical suffering wipe out all this, and unite all men in sympathy and human equality. And all those in the world whom a kind fortune has permitted to devote themselves to this profession, rejoice and are grateful for the work you are inaugurating to-day.

OBITUARY

THOMAS ALVA EDISON
1847–1931

THOMAS ALVA EDISON died in the early morning of October 18. From the tributes from many sources printed by *The New York Times*, the following from Mr. Hoover and from a number of scientific men are quoted:

It is given to few men of any age, nation or calling to become the benefactor of all humanity. That distinction came abundantly to Thomas Alva Edison, whose death in his eighty-fifth year has ended a life of courage and outstanding achievement. His lifelong search for truth, fructifying in more than a thousand inventions, made him the greatest inventor our nation has produced, and revolutionized civilization itself. He multiplied light and dissolved darkness; he added to the whole wealth of nations. He was great not only in his scientific creative instinct and insight but did more than any other American to place invention on an organized basis of the utilization of raw materials of pure science and discovery. He was a rare genius. He has been a precious asset to the whole world.

Every American owes a personal debt to him. It is not only a debt for great benefactions which he has brought to every American, but also a debt for the honor he brought to our country. By his own genius and effort he rose from a newsboy and telegrapher to the position of leadership among men. His life has been a constant stimulant to confidence that our institutions hold open the door of opportunity to those who would enter. He possessed a modesty, a kindliness, a staunchness of character rare among men. His death leaves thousands bereft of a friend, the nation bereft of one of its notable citizens and the world bereft of one of its greatest benefactors. I mourn his passing as a personal friend over a quarter of a century.—HERBERT HOOVER, President of the United States.

It has seldom fallen to any one man to be of such service to humanity. The world mourns a great benefactor.—SAMUEL W. STRATTON, chairman of the corporation of the Massachusetts Institute of Technology (dictated a few minutes before his own death).

I think his reputation was great outside America. One could not go anywhere in the world where he was not considered the greatest inventor and help to mankind. He was kind and considerate and a good friend.—G. K. BURGESS, director of the Bureau of Standards.

In my opinion Mr. Edison had a greater influence on the world than any other American.—KARL T. COMPTON, president of the Massachusetts Institute of Technology.