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CONTENTS

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MEDICINE AND THE PUBLIC[1]

Mr. President, Members of the Medical Society, Ladies and Gentlemen: We are gathered here to-night to dedicate this building to the science of medicine in the District of Columbia, and, in a broader sense, to the service of the community and humanity.

This beautiful building is the realization of the dream of the society for a century and over, and has been made possible by the loyalty and self-sacrifice of a large majority of the medical men of this city, and the generosity of many friends of our profession here and elsewhere.

The funds necessary for the erection of this building were raised in two years by the persistent, untiring efforts of the members of the building committee, who have had supervision of the preparation and execution of the plans, and who feel that they can congratulate the architect, the contractor, the Medical Society and the District of Columbia upon the results.

While the funds immediately necessary for the erection of the building have been raised, there remains a mortgage of fifty thousand dollars to be carried by the society.

It is the desire of a majority of the members that this indebtedness be paid off in the near future in order that this building may be presented to posterity as their contribution, leaving the care and maintenance as the only burden.

The aim of the Medical Society as typified in this building is the elevation of the profession to a higher scientific standard for increased public usefulness. There can be no doubt that this aim concerns the public even more than it does the profession. The more highly developed the scientific attainments of the medical profession, the more it redounds

[1] Dedicatory address delivered on occasion of the opening of the new home of the Medical Society of the District of Columbia, January 12, 1921.

to the advantage of the public, which receives thereby increasingly efficient service from the individual members of the profession. It is in this way that the interests of the profession and the laity are interwoven.

Feeling, as we do, that the influence of our profession in public affairs just at the present time is not so potent as it was a generation ago, or as it should be, we have cast about to discover the cause and, following the traditions of our profession, to apply the appropriate remedy for the malady. After oft-repeated discussions the general feeling has come to prevail that the lack of professional solidarity is the underlying cause which robs us of the influence at the council table of our city which unselfish devotion to the best interests of the public appears to justify.

Recognizing the gravity of this condition, our former president, Dr. Davidson, conceived the cure, in leading the society to undertake the erection of a commodious centrally located home of its own. To him the members of the society are indebted for this beautiful edifice and his name will go down in the history of the society, and of this city, as one of the great benefactors of his time.

The beneficial effects are already evidenced in the enthusiastic loyal cooperation of the members of the society and of its lay friends who have made possible the completion of the task, rendered more difficult by the disturbed conditions which prevailed in this city and throughout the length and breadth of the land.

No profession has loftier traditions and aims than have animated the medical profession throughout all the ages. In the past the medical profession has been interested in all the great questions of the day, whether pertaining to the health of the community or matters entirely outside of the realm of medicine.

Let us not be satisfied with the accomplishment of scientific attainments, but ever keep in mind our broader duties as citizens of this great republic.

In fulfilling our duty to the public let us not be unmindful of our sacred obligations to the fellows of our own profession, especially those who through misfortune need our aid, sympathy and encouragement. In this connection may we not do well to borrow from the little people across the Pacific the motto which is symbolized in those two little bronzes seen upon the Temple of Nikko, which warn the traveller to "see no evil, hear no evil, speak no evil." In the consideration of our broader duties as true physicians, let us lend our earnest aid not only to those in whose keeping the moral and spiritual welfare of the community rests, but to give in our daily work such council and encouragement along these lines as lie within our power.

In turning to a consideration of what the Medical Society of the District of Columbia has accomplished for our city we find achievements of which we may be justly proud. The curbing of typhoid by securing an abundant supply of pure water and pure milk; the medical inspection of the school, by which nutritional diseases, defective eyesight and infectious fevers are reduced to a minimum; providing for new hospitals, raising the standards of the older institutions; the practical elimination of malaria through the reclamation of the Potomac flats, which were the breeding places of the mosquito; the effective control of contagious and infectious fevers through compelling quarantine, with report of such cases to the Health Department; the inauguration of the crusade against tuberculosis and the bringing the knowledge of its communicability and the care of the disease to the attention of the public; the compulsory registration of births and deaths and many other questions pertaining to the welfare of the public have been enthusiastically supported by one Medical Society.

What I have said will convince you that the best individual and collective efforts of our profession as represented by the Medical Society of the District of Columbia have been and are being spent in the service of the community and of our country.

Perhaps in none of the professions does the student by his mere entry accept such a burden of responsibility; and, if achievement is measured by opportunity, in no other profession is he so certain—whatever his accom-

plishments—to fall far below the ideal set for him by the traditions and history of his calling.

From the days of St. Luke to this very evening, the profession has recognized its duty and responsibility and in the fullest sense has endeavored to meet them. As steadily and quietly as water flows, and with the same beneficent effect upon mankind, the work of the medical man has proceeded through all the ages covered by recorded history.

At first, service rendered by his own hands to the sufferer—combining the functions of physician, surgeon, nurse and pharmacist; then, with the development of knowledge, a separation of these fields of work; then a cultivation and intensification of the possibilities in each field; but always service.

Always the subordination of his own comfort; of opportunities for wealth; of leisure; of home life; of public recognition; to the need of serving mankind; and, in instances without number, the sacrifice of life itself in the effort to serve his fellow man; to extend and broaden knowledge, and thereby acquire the means whereby others might live.

No man dare think or say these things of himself; but if they are to be seen in others, if they form a part of the noble traditions of a profession to which he has been called; if they are of the very character and being of his brothers in that profession, then he may recognize and proclaim them, for they are not only his, they are a portion of the heritage of all mankind.

The members of this Society permitted no object of personal ambition and no activity of professional life to withhold from our government during its hours of stress the devotion and service due from each citizen. This was proven by the ready response to the government's call for physicians during the recent World War, when more than one fourth of the total number of our doctors enlisted in one or another of the three branches of the service. Of this number three made the supreme sacrifice in giving their lives for their country.

During the campaign for obtaining funds for the erection of this building it was interesting and gratifying to note that when the public became acquainted with the aims and accomplishments of our medical society, it responded promptly and generously to our appeal for financial assistance, and I repeat, that this appeal was not wholly, nor indeed in greater part, for the ultimate benefit of the medical society, for, as I have already shown, the interest of the community and the society are identical.

Through the influence of this building the standard of medical practise will be elevated. This will come about by additional facilities for scientific research, by lectures with their stimulating discussions, as well as by the presentation of unusual cases and rare specimens.

The Medical Society of the District of Columbia has the standing of a state society and as such is an integral part of the American Medical Association. One of the nine trustees of the American Medical Association who controls the finances and policies of that great organization composed of more than sixty thousand men of the medical profession, is a member of our society. The society also has its representative in the House of Delegates of the American Medical Association. It may not be inappropriate to mention in this connection that we are the only state society to hold weekly meetings throughout the year, which in itself increases immeasurably its sphere of teaching.

The Medical Society of the District of Columbia was founded September twenty-forth, eighteen hundred and seventeen, and during the one hundred and three years which have elapsed since that time the science of modern medicine has been developed. The society numbers among its members past and present physicians who have made valuable contributions to the development of medical science.

The membership body of the Medical Society of the District of Columbia comprises every branch of medical science and every age of medical man from the recent graduate to those who through long years of service

have earned retirement. The society especially fosters and encourages younger members to read essays and to present unusual cases, and they are always certain of an appreciative audience. This is a keen incentive to study and research work.

Since it is true that history repeats itself, is it not well to pause now and then to take a glance at the achievements of the past in order to gain new encouragement for the accomplishment of the future?

A survey of its history shows that medicine has had a far greater development in the past century than in all previous time. The changes that have taken place have been truly stupendous. The current of medical progress is still in rapid and vigorous flow, with no sign of slowing. A multitude of keen investigators are eagerly and industriously hunting out and developing new knowledge and new methods. Every year or two yields new facts of fundamental value. These discoveries are rapidly assimilated into the body of diagnostic and therapeutic methods and practise; the novelty of one year becomes the routine of the next.

Of the great body of science, medicine is an integral part. In no department of knowledge is scientific method more rigorously pursued, or with more productive results than in medicine. It is the use of the scientific method alone that has brought about the vast development of medicine within the past century, with all the resultant benefit to mankind. In no field of human activity is there a greater exercise of humanitarian spirit than in medicine. In the difficulties that confront mankind to-day, the course and the duty of the medical profession are clear—to continue the vigorous employment of those scientific principles and the exercise of the altruistic spirit that elevated medicine out of the empirical and stagnant inefficiency that characterized it for a thousand years. Furthermore, medicine is in a position to offer the application of those same principles and spirit to the solution of the grave difficulties that confront mankind to-day. Medicine can proudly present its record before the world as a conspicuous example of the attainment of substantial efficiency and social service; the methods and the spirit that have brought success to medicine ought to help in bringing equal efficiency and achievement in industrial, economic and civic institutions.

The great achievement of medicine not only affords us inspiration and pride, but impose upon us serious responsibilities and obligations. It is our duty, individually and collectively, to keep ourselves worthy of our great profession, assiduously to cultivate our art, to maintain unimpaired the great heritage of the past, and, as opportunity offers, to add to the store of medical knowledge. We should cherish the principles and the spirit that have brought us to our proud position. We should keep aglow the light that has dispelled so much of the darkness and obscurity of the peculiar problems that confront us, and let that light shine into the gloom of a disordered world. In the consciousness of the great achievements and usefulness that have been attained, and in our own assiduous efforts to live up to the spirit of our great profession, rest the greatest satisfactions and the greatest rewards that can come to us.

Will you not turn with me for a brief glance at some of the developments in medicine during the last half century. In the short time which I have at my disposal it will be possible to touch only the high lights of this subject.

Fifty years ago the use of the microscope was in the hands of a few men who devoted their lives exclusively to research work, whereas to-day, it is one of the instruments at the right hand of every busy practitioner, who would feel as much at sea without it as without his stethescope or test tube.

Among the broader developments of the last half century when medical science branched out and its progress depended upon highly specialized study and research, the practise of medicine evolved the specialist. These have increased to enormous numbers, and surely for the most part are justifiable, but it must be confessed that some are needless and immature. It will require a decade or more to

drop to the mean level in this regard. There can be little doubt but that the pendulum is swinging from the extreme degree in specialized medicine so that in a few years the normal balance between the specialist and the general practitioner will be established.

Along with the growth of specialized medicine has come the laboratory, which at the present time is the brain of practical scientific medicine. It is to the laboratory that we are chiefly indebted for all of the great discoveries in medicine and the allied sciences. The beginning of this era of laboratory work was the establishing of Von Ziemssen's laboratory in Munich in 1885.

Among the great discoveries which we owe to the laboratory are Pasteur's work on pathogenic microbes, in which he brought out the theory of protective inoculation against certain infectious diseases. Later on he gave to the medical world the results of his studies on rabies and anthrax, which have been of immeasurable service to mankind throughout the civilized world.

About the same time Koch introduced a new method for the isolation and pure culture of bacteria which is essentially the same as is now in use. In 1874 Ehrlich improved the method of staining smears which had been worked out by Weigert three or four years previously. This opened the door to the study of a great number of microorganisms and has proven one of the most important diagnostic criteria in the practise of medicine. As a result of Weigert's and Ehrlich's laboratory technique the spirillum of relapsing fever was discovered in 1873 by Obermeier and the parasitic amœba in dysenteric stools by Loesch in 1875. Koch was able to grow anthrax bacilli for the first time in artificial media in 1875. In 1879 Neisser announced the discovery of the gonococcus. In 1880 Pasteur presented his monograph on the study of the streptococcus and the staphylococcus which had been isolated for the first time by him two years previously. About the same time Eberth described the typhoid bacillus as the cause of the continued fever known as typhoid. Lavèran discovered and described the plasmodium of malarial fever, November 6, 1880.

Perhaps the most important of these discoveries and the one which attracted instantly the most wide-spread attention among the laity as well as the medical profession was that of the tubercle bacillus by Koch in 1882. Tuberculosis had been known and observed for centuries, but the microorganism which produced it had eluded all of the keenest observers up to that time. Another almost equally important discovery made by Klebs in 1883 was the diphtheria bacillus; its causal relation to diphtheria was demonstrated by Loeffler in the same year. Along about this time came the discovery of the tetanus bacillus, the colon bacillus, the meningococcus, the bacillus of Malta fever and a number of others. Still another contribution along this line was that of Smith and Kilbourne, who discovered that Texas fever was transmitted by the cattle tick. However, some years antedating the announcement of Smith and Kilbourne, Dr. A. F. A. King, of this city, read a paper before this society in which he expressed the belief that malaria was transmitted by the mosquito. This may, and probably did, give a hint as to the transmission of certain infectious diseases, which led to valuable discoveries, chief of which was that of Reed and Carroll of this city, who demonstrated that yellow fever was transmitted by a certain species of mosquito; thus corroborating Dr. King's theory. As a result of this discovery Cuba was made safe to the traveler and the completion of the Panama Canal was made possible.

Another notable contribution to practical bacteriology was the discovery in 1896 by Widal of the agglutination test for typhoid fever, upon which the present-day differential diagnosis between typhoid and other continued fevers rests.

With the mention of one additional important discovery I will pass on to developments in other fields. Perhaps none of these mentioned heretofore have arrived at a more prominent place in the history of valuable discoveries than Wassermann's serodiagnosis

of syphilis in 1907 and Schaudinn's discovery of the *Treponema pallidum,* two years earlier, in 1905.

Medical science is indebted to the pathologists for many important and valuable contributions during the past fifty years. As a result of their investigations the pathology of many of the diseases to which human flesh is heir has come to be more or less understood. The progress of physiology has kept pace with pathology along allied lines, but its scope is much more comprehensive than the latter, as it invades the domain of chemistry to some extent. This field of medical research has contributed more of practical value than any other, with the exception of bacteriology, with which it is also closely linked. In this field has been developed the knowledge of the ductless glands which at the present time is attracting so much attention. It was Brown-Sequard who, in 1891, called attention to this domain of the body.

Charcot laid the foundation for the later developments in psychoanalysis by his studies on hysteria a half a century ago. Freud in the present generation has carried this branch of medicine to the point of practical application. To Golgi's method of staining, which was given to the medical profession in 1873, the knowledge of the histology of the nervous system is attributable.

The place which Lister occupies in relation to the developments of surgery is recognized by the entire scientific world. Not infrequently he is alluded to as the father of modern surgery. As he antedates the period covered by this paper I will not dwell further upon his achievements, although to him may be attributed the foundation of aseptic surgery.

The advancements in this branch of medicine are so many and spectacular as to well nigh overwhelm the chronicler of a brief history of medical progress.

One of the earliest important steps in the progress of surgery was the introduction of steam sterilization of dressings and instruments in 1886 by von Bergmann. This superseded corrosive sublimate antisepsis then in use.

Esmarch, in the early seventies, called attention to his method of controlling hemorrhage at operations by bandaging the limb above the site of operation, thereby giving the operator an almost bloodless field and greater freedom for exact work, and at the same time saving the patient from unnecessary loss of blood.

Sir Spencer Wells went a step farther and devised the clip or hemostatic forcep to pick up the individual bleeding points at the site of operation, this doing away with Esmarch's method.

Local anesthesia by ether spray was introduced by Richardson in 1886 and cocaine by Anrep and Kohler about the same time. Dr. Corning, in 1885, described the results of his experiments in spinal anesthesia, although the claim for this new and important discovery has been made in Germany on behalf of Bier in the same year. Six years later Quincke called attention to the importance of a study of cerebro-spinal fluid in certain local and system diseases.

As a result of the work of Corning, and later Quincke, Crile developed his method of anocia-association, which for a brief time was widely used.

The strides in abdominal surgery during the past twenty-five years have been so rapid, varied and extensive as to make it impossible to select any high points for mention, since they all come well within that category.

It may not be inappropriate to call attention in passing to the fact that much of the recent progress in field surgery has been due to the great surgical clinics which have been developed during the past twenty years, both here and abroad.

The care of the mother at child-birth is the oldest branch of the practise of medicine and, without doubt, the most important to the future of the world. Whereas, there have been no startling developments in this branch of medicine yet the obstetrician has kept pace with the surgeon in modern methods and asepsis.

The progress in the field of diagnosis rests

upon the developments in bacteriology, physiology, histology and chemistry. A history of any one of these necessarily describes diagnostic progress.

In therapeutics the most noteworthy advance was the gradual transition from the old-time so-called gunshot prescription to the simple single drug prescription devoted to the specific need for which it is to be used. Some of the more beneficial additions to modern therapeutics are chloral as a hypnotic and the salicylates for the relief of so-called rheumatic affections.

The discovery of the hemostatic effects of certain drugs by means of which hemorrhage beyond the reach of the hemostatic instruments may be controlled has been a great boon to the physician and to the surgeon.

In the eighties the antipyretic drugs were given to the profession and were soon eagerly appropriated by the laity for the relief of vague and distressing pains in one part of the body or another.

A very important contribution to therapeutics was the introduction of von Behring's anti-diphtheritic serum in 1893. Another was the introduction of anti-typhoid inoculation.

The modern synthetic sleep-producing drugs, of which trional and sulphonal are examples, were introduced in 1893. Novocain, which is widely used, was discovered by Einhorn in 1905. No more important remedial agent has been given to the medical profession than Ehrlich's salvarsan in 1909, which has done much to rob syphilis of its terrors both to the community and to the individual.

The multiplicity of pharmaceutical and biological products is bewildering and a large percentage of them are useless and serve merely to enrich the manufacturers and to deceive for a time the credulous public.

The most spectacular of all the discoveries in modern medicine is that of the X-ray, which Roentgen announced in 1895. Not only has it proven a useful therapeutic agent but it holds a commanding position among diagnostic methods. Another therapeutic agent which aroused a great deal of attention was the introduction of radium for the treatment of cancer and indolent ulcer, the exact value of which has not, as yet, been definitely determined. The trend of to-day in therapeutics is to limit the amount and number of drugs used, and to employ hygienic and dietetic measures in the treatment of disease, and to reach out after prophylactic methods.

In passing from a consideration of therapeutics I may be pardoned for calling attention to the fact that the medical profession differs from all others in being the only one which, in its practise, is self-destructive, by teaching the public laws of social hygiene and of preventive measures.

A necessary development in the scientific care of the sick was the advent of the trained nurse, who came to be recognized as a necessity in the latter part of the nineteenth century. Nursing as a profession was suggested by Dr. Samuel Gross about fifty years ago, and shortly thereafter, on August 1, 1875, the first training school for nurses was formally opened at Bellevue Hospital, N. Y. Soon, other training schools were established, until at the present time training schools for nurses are to be found in great numbers throughout the civilized world.

It would be difficult to conceive the possibility of carrying out the modern methods of caring for the sick without the invaluable aid of that great body of earnest and intelligent women who go to make up the nursing profession. One has only to mention the Red Cross to realize the deep root the nursing profession has taken in the social fabric of the world.

Of necessity the scheme of medical education and the development of medical libraries have grown with the needs arising out of the progress of the profession during the past half century.

Having considered briefly a few of the more important epoch-making discoveries which have marked the progress of the medical profession during the past half century, may we not draw therefrom encouragement to look at the future, rich in the promise of developments which will progressively lessen

disease, wretchedness, poverty and despair. This, ladies and gentlemen, is truly the highest mission of the medical man.

There remain many problems which in our day are yet unsolved and in each decade new questions will arise.

Among some of the more pressing problems which face the medical profession of to-day is the discovery of the cause of cancer; a more perfect control of tuberculosis, leading to its ultimate eradication; the ultimate elimination of venereal diseases through compulsory registration, and a wider dissemination of the knowledge of these diseases among the laity, a more accurate knowledge of the etiology, pathology and care of epilepsy, the sufferers from which are the most pathetic and dependent members of society; the relief of and the ultimate prevention of nutritional diseases through a more perfect knowledge of dietetics and hygiene on the part of physicians and the public; a crusade against the ever-increasing number of those, especially the young, who are afflicted with defective eyesight, due chiefly to improper lighting of homes and school rooms; and too frequent attendance at motion picture entertainments.

In closing I can not do better than to leave with you the thoughts embodied in an address by that great medical teacher, Dr. Keen, who says:

> In all humility, but with earnestness, medical men tender you their labor and practise, in the hospitals, on teacher's platform, and in the laboratory. What they expect and look forward to is appreciation, not of the individual, but of the aggregate work, and cooperation on the part of the public, for the immediate results of our work are at the same time humane and practical. The reduction in your death rate of one in a thousand means, beyond the saving of one life, a lowering of more than thirty in the total number of cases of sickness, and therewith prevention of much anxiety, wretchedness, and financial loss or ruin in as many families. Results like these are liable to be accepted as natural. It should not be forgotten, however, that they are obtained only by the work of medical men who labor for the good they can do, often as hermits, unknown, unappreciated, always bent upon the diminution of the number of problems which hitherto were deemed hopeless.

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THE SCIENTIFIC BASIS OF SCIENCE TEACHING

The article on "The Scientific Teaching of Science" in the issue of October 15, 1920, is both suggestive and disappointing. It is suggestive because it is the record of an experiment in the methodology of science teaching; it is disappointing because the title leads one to hope that some one has at last accumulated the necessary fact basis for the scientific teaching of science, yet the article presents no such facts.

The author says that "a student will much more rapidly develop the right mental attitude by discovering facts for himself, even though they were known before, than by memorizing a multitude of facts discovered by other people." If this statement were challenged it would be quite impossible in the present state of our knowledge for the author to substantiate his point of view with facts. Probably the statement is true but the business of science is to provide a fact basis for our knowledge and establish principles indisputably. Furthermore it must not be supposed that these two alternatives exhaust the methods of procedure. It is conceivable that a student might develop the right mental attitude more quickly by imitation, following through the steps of discovery taken by some original investigator than by blundering around in a problem of his own. Whether he will or not must be determined by careful experiment, record of results, and this not with a single student, but with many.

There can be no question but that it is a very important thing both in the university and in the earlier schools to develop in the student the power of creative thought. The author of the article records an experiment in progress for three years in the scientific department of a university in which the customary laboratory-lecture-quiz method was re-