

**Address.**NEW DUTY OF THE MEDICAL PROFESSION:  
THE EDUCATION OF THE PUBLIC IN  
SCIENTIFIC MEDICINE.\*

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THE welcome that is extended to us this year by this great metropolis is peculiarly grateful, for Chicago is the home station of this national association. This great city should serve as an inspiration to us all, for it personifies the best of the American spirit — vigor, enterprise and stability of purpose. This city, during the year, has lost one of its most gifted citizens, one whose name was honored in all countries, an ex-president of the association. All honor to the memory of Nicholas Senn, surgeon, writer, investigator, publicist, a man who did pioneer work in surgery and who was always ready to promote the interests of the medical profession.

The coming together of men of mutual aims must always be a subject of public interest. What is the meaning of this gathering of medical men from the length and breadth of this great country?

First: That individually they may be better able to care for the sick. Second: That they may collectively be better fitted to prevent disease. Third: That they may know men and their ways and by social intercourse may live fuller and broader lives. This association is a great power for good or for evil. May its acts be guided by motives that are directed toward the health and prosperity of the people.

There are many subjects of which I should be glad to speak. Some of them have been considered by the association in previous years. Medical education; medical legislation; the desirability and the question of the advisability of the medical profession taking an active interest in practical politics; the establishment of a national bureau of health; the abuse of medical charity and the work of the Council on Pharmacy and Chemistry,— all are subjects of vital interest. To-day, I invite your attention to what I believe is a relatively new duty of the medical profession, that of judiciously educating the public in the present position of medical knowledge and in the advances that are being made in scientific medicine.

Until recently medicine has observed a silence as to its position and accomplishments that has made it unique among its sister sciences. A veil of mystery has surrounded it. Born, as medicine was, of fear, nurtured by superstition, it went through the centuries in twilight until it grasped the torch of science, which is beginning to illuminate its way. For long years medicine was only a handmaiden to theology. Faith, that inestimable gift to man, was the guiding star of medicine. Faith in "simples," in fetiches, in amulets, in poisons, in all the forces of nature and in all the dread legion of phantasms that

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may be formulated by the mind,—all these at times have held sway in medicine. Theories, hypotheses and "fads," ingenious and often containing a grain of truth, have in turn dominated medical practice.

The profession has properly been conservative, because the truth in reference to health and disease has not been known. When the vital processes are looked at in the abstract, they are so marvelous and still so far from being entirely understood that it is little wonder they are surrounded by an air of mystery. The family practitioner of our grandfathers' days was a man who was greatly respected. He was discreet and silent. When he entered the sickroom he held his counsel. He appreciated the fact that he was in the presence of a human being afflicted with disease. Frequently he realized that he did not know either the natural processes of health or the natural history of the disease that he was facing; therefore he was silent. The satirists have always pictured the practitioner of medicine as a venerable old gentleman who discreetly nodded his head in acquiescence or disapproval, who said vague things and who encouraged his patient and the household to hope for the best and to prepare for the worst. I believe it is generally accepted that our profession has been deemed one that has been filled with charity and love of man, but it has not been conspicuous for its scientific methods.

During my lifetime I have seen, as have many of you, the development of scientific medicine. But medicine to-day, although a science, is still in part an art. Yet the sum of scientific knowledge in medicine is already very large, and as a science medicine has changed from the position in which it haltingly progressed until now it is advancing steadily along many lines.

The art of the practitioner during the past few years has not progressed so rapidly as the science of medicine. Rightly, the attention of the profession has been directed to ascertaining the causes of disease; hence the natural history of disease and its diagnosis have in large measure occupied the attention of the profession. The lack of training in scientific methods led men to reach conclusions from insufficient data; and when these men found that they were mistaken they were frequently swept to the other extreme, that of failing to accept anything of value unless it could be absolutely proved.

Meantime the art of the practitioner has languished. Proprietary medicines and nostrums have been too frequently used by practitioners, feeling as they have that "they may help and the patient wants them." Fortunately, experimental pharmacology at last has come to give us the truth, for by its findings we now know what really follows when a drug is given.

At present I believe that physicians are too conventional in their methods of treating disease. They have not paid sufficient attention to the alleviation of the suffering that accompanies some of the incurable maladies. Hydrotherapy, massage, electrotherapy, and particularly psychotherapy, as measures of relief, are permitted to

rest in the hands of empirical practitioners, who but slightly understand the forces with which they are dealing. Human beings cling hard and fast to hope. They, fortunately, will rarely accept defeat. They constantly hope when in distress that aid will come by some intervention, physical, psychic or divine. This insistent demand for relief must be remembered by practitioners, but they should also recognize, as Louis did, that there is a natural course of disease.

Progress in science is always haltingly made. In medicine, which is but applied biology, the movement now is steadily forward; for through chemistry, biology and physics has come some knowledge that enables us to comprehend more clearly many of the vital phenomena of life. To-day we are in possession of certain irrefutable facts. It is unnecessary for me to catalogue to you the advances that have been made in medicine during this last generation; suffice it to say that it has caused a revolution. The application by Lord Lister of Pasteur's work in biology has made a new era in surgery. Chemistry and biology have made sanitation a science. Physics has enabled us to comprehend some of the vital processes. These contemporary sciences have illuminated medicine, but have medicine and surgery in themselves properly advanced? I think not. The field for advance is still open in clinical medicine and surgery. The human being, particularly when sick, has not been scientifically observed as thoroughly as he should. Valuable scientific facts may be obtained by the clinician in the out-patient department and wards of a hospital, or, for that matter, wherever he meets disease. The reason that more of these observations have not been made in hospitals is due primarily, I believe, to the lack of adequate training of men in scientific methods, but perhaps more largely to the general belief that scientific work in medicine must be done in a laboratory. It will be granted, I think, that in science the closer one can observe a problem the better. Should not the wards of a hospital be the real laboratories of medicine? To-day there is in the wards of hospitals a wealth of facts that is not recorded even when recognized. When the opportunities that are really within our grasp are utilized, then there will be still greater progress in medicine.

The three great professions, theology, law and medicine, have ever been the custodians of the spiritual, the material and the physical welfare of man. Medicine has been until recently in the background. The principle of theology has always been and always will be a matter of faith. The law has been a series of rules of action based on precedent and intended to secure equity and justice between human beings. Medicine, however, from being an art that ministered to the physical distress of man, has come into a broader field of activity. Intelligent men and women now recognize that faith is dependent in large measure on the physical condition of the individual. Our criminal classes, it is now known, are frequently physical degenerates. Moral ob-

liquities are often caused by physical conditions. The material welfare of man is no longer in the hands of the law alone; for great epidemics, which destroy scores of people and invalid thousands and which often paralyze the commerce of a part of the world, may to-day be controlled by a knowledge of contagious diseases.

The leech which served in the crusades was a camp follower, a servant retainer. To-day the medical man who is responsible for the health of troops in the field has as high a responsibility in gaining success as the commander-in-chief of the army. The balance of power between the nations of the earth is maintained, in part at least, by the fitness of troops for service. This statement I make as applicable to every civilized nation. Its truth has been demonstrated in every modern war, never more strikingly than in the Spanish-American War.

A singular and unprecedented apathy, to be charitable, prevented the chairman of the Committee on Rules of the House of Representatives of the United States Congress from permitting the United States Army Reorganization Bill to come before that body. And this notwithstanding the fact that the bill was favored by the President of the United States, the Secretary of War and the United States Senate, while a careful canvass demonstrated the fact that the bill was favored by a majority in the House of Representatives. But within a few weeks the chairman of the House has seen the truth and has allowed the bill to be passed and it has now received the signature of the President. We are at last in a position to meet, in part at least, the exigencies of a modern war.

No man, woman or child in the civilized world can be so situated, in labor, in travel, in attending schools or churches, in fact in existing, without being a debtor to the knowledge that has come from scientific medicine. This new phase of development in our profession adds greatly to its responsibilities. We are no longer a group of men and women who only soothe the brows of the afflicted and alleviate human suffering. Intelligent physicians or surgeons to-day know the natural history of some of the diseases with which they come in contact. Science has placed in their hands knowledge with which to control these diseases. They are public servants and their duty demands that they protect the individual against the ravages of disease as well as alleviate or cure. We, as the medical profession, are now in possession of truths that can help our fellow man. Is it not our duty to tell our fellow man? For we are told that the "gospel must first be published to all nations" (Mark 13: 10).

Education has been, and I sincerely trust always will be, the corner stone of our civilization in this country. No permanent advance will ever be made unless the people are educated to the truth. Laws are never effective unless the people want them to be enforced. I cannot recall any great or permanent advance that has been made by force alone; and even when force has apparently succeeded, it usually leaves an unjust

and more or less complex, unstable condition. Our Civil War blotted out a great evil, but it left a race problem that has not been satisfactorily settled. The "flare-back" of force usually defeats itself. I have an abiding faith in the public. I believe in it. When made to think, it reaches a wise solution of a problem. Observe — the key to safe public opinion is to make the public think. Unthinking people are less to be depended on than animals. If it is true, that the medical profession now has accepted facts that bear on the welfare of the people, is it not our duty to make them known? Judicious publicity is, I believe, a new duty of the medical profession to the laity. How can this be accomplished? There has already been established a Board of Public Instruction in this association. This board, as well as all committees, should be answerable to the Board of Trustees; it should be representative and eminently judicial in character and should have as advisers the experts in the profession.

In what medical subjects should the public be educated? It will be better to teach thoroughly a few important subjects than to attempt to cover too large a field. Let us not be blind to the fact that our scope of usefulness as physicians in dealing with the large disease problems depends in great measure on the co-operation of the public. We must have intelligent co-operation to make our work as effective as may be. Tuberculosis is still the most pertinent subject on which information should be given. The public should be informed that at present an early, thorough operation is the most certain way of curing cancer. The work already accomplished by the public in co-operation with physicians in controlling tuberculosis, ophthalmia neonatorum and scarlet fever comes to every one's mind. The work that has been done in controlling yellow fever in Louisiana by the public and the medical profession is a striking example of educating the people as to the facts concerning disease. The various infectious diseases are obviously ones concerning which the public should be informed. The people should be educated as to the necessity of pure air, pure water and pure food; they should know the hygienic value of bathing. They should know that hospitals are provided not alone for the care of the sick poor but that knowledge of disease may be advanced. Take a familiar example in our social life: When it is recognized and brought home to the public that contagious diseases in children are to a degree unnecessary, that by proper sanitation and medical school inspection they may be in large measure prevented, then people will demand that their little ones in public schools shall be protected against disease, which often leaves them invalided and crippled for life. A child among the better classes to-day, until it begins to go to school, is usually free from contagious diseases, but the moment it enters a school it is subjected to dangers from infection which it rarely escapes. To be consistent in our present method of life we might as well expose our children deliberately, as they did in country districts in former times, when a child was sent to a neighbor's

to get the measles, as it was a convenient time for him to be sick. The physical and intellectual development of our children is in the public mind but the possibility of preventing them, by adequate precautions, from having infectious diseases is not appreciated. The sanitation of churches, places of amusement, vehicles of transportation, so intimately concern the public that the essentials of their proper care should be widely known. When the public is so informed, it will demand a reasonable degree of security from infection. But, it may be said, all the truth is not known regarding these subjects; true, and, therefore, we must be very sure that we tell only the truth.

Commercial houses within a few years have found that it pays to care for their employees. It is true that in some instances a spirit of altruism has led to this action, but practical experience has shown that a higher and a better type of work comes from employees who are intelligently cared for. In one commercial house in Boston a physician gives his professional services to the employees as he might to a hospital clinic. If any salesman falls below in his sales he is directed to appear before this physician. A careful examination usually reveals some adequate physical cause that accounts for the individual's lack of energy. Anemia, indigestion, constipation, incipient tuberculosis, are recognized and treated and the salesman is frequently restored to his full earning capacity. Intelligent merchants recognize that the better care that they take of their employees the better service will be rendered in return. Loyalty is a force the value of which cannot be overestimated, and it is secured and preserved by employers who are really interested in their employees.

The czar-like dictation of labor unions which arbitrarily limits the amount of work that a man or woman is permitted to do is a force that seems necessary to meet the greed of capital, which in the past often cast aside its employees like worn-out garments when they were no longer useful. I hope that labor unions in the future will demand not that the number of hours and the productiveness of the individual shall be limited, but that capital and labor shall protect the individual against disease, in order that he may have the highest degree of productiveness. Throughout the world there are co-operative business establishments in which the interests of the employees are protected in a measure, but this protection is usually financial. If the employer and employee could recognize that the preservation of the working capacity of the employee is of even greater importance than a 10% dividend on a few hundred dollars saved, a great mutual gain would be secured. Business men should see to it that their employees are informed as to the proper methods of life; protection against disease by employers is not alone a duty on their part but a real financial investment, as recognized in the work of the Welfare Department of the National Civic Federation. The medical profession must recognize that co-operation with business men in these public duties is a new duty of citizenship.

Who among the public should first be educated? Those who are leaders in the community; those who are in positions of responsibility, national, state, city and town authorities, trustees of hospitals and schools, — they should first be informed as to the facts concerning disease. Experience has shown that the lay public takes a keen interest in everything concerning medicine and its progress. The success of nostrum vendors has demonstrated their skill in appealing to the sentiment of the public. The Board of Public Instruction should always appeal to the reason of the people. Great discretion should be used in selecting the subjects in which the public should be educated. Experience would teach such a board what not to do. "Don't" should be the motto for this board when in doubt as to educating the public.

What are the means by which we may reach the public? Newspaper articles on selected subjects, giving facts concerning a given disease, but not the treatment of disease, should be furnished the press. These articles should be signed and published under the authority of the Board of Public Instruction. That these articles should be judiciously edited must be apparent to all. No statement issued by the Board of Public Instruction should fail to be the absolute truth. Irreparable damage to the medical profession and to the public might be done by unwisely exploiting mooted subjects. It would be unfortunate if this new duty of educating the public in medical matters were taken up indiscriminately by the members of the medical profession. It may well be appreciated that this new duty may be considered a legitimate means of advertising the individual. But self-seeking for the medical profession, or for any individual member of it, would be quickly recognized by the public. Discredit, then, would be brought on the profession and on the individual.

Another means of reaching the public might be by magazine articles. The facts concerning certain diseases might well be given to skilled lay writers, who should be paid for their services. A lay writer has the art of presenting a subject to the public in an attractive manner. For example, let the subject of animal experimentation be investigated by one of the magazine writers of this country. Open wide the sources of information to such a writer. Then let a series of articles be published in order that the public may know the truth as to the inestimable benefits that have come from animal experimentation, not to men alone but to animals as well. Reprints of such articles, pamphlets and circulars of information would be a powerful means of educating the public. Let circulars of information regarding the subject of animal experimentation and of vaccination be placed in the hands of every legislator in this country; in fact, in the hands of every citizen who is misinformed as to the truth. In the event of a great epidemic of yellow fever or cholera, let a pamphlet containing the facts concerning the spread of the disease be sent to every householder in the district. Every physician would be then

obliged to know the facts. This leads me to call your attention to one of the obvious effects on the medical profession of educating the public. It is to be regretted, but it is true, that there are ignorant practitioners in our profession. If the public is informed as to the facts concerning an individual disease, a physician will be forced to inform himself as to the recent advances in that disease.

To my mind, one of the most important movements in the association is the establishment of county graduate schools in the various states. I can conceive of no better stimulus to this work than the adoption by the county schools of a plan by which one of its members shall inform the public, once a year, as to the facts concerning some selected disease.

The work of the Council on Medical Education is progressing. Dilapidated medical schools are disappearing. Why? Publicity. When the public recognizes that in order to become a well-educated physician certain requirements are absolutely essential, then, and not till then, shall we have true reform in medical education. I commend to your consideration the work of the Council on Medical Education. It is dealing with the tap root of the tree of the medical profession. Its reforms must not be too radical. There are still isolated areas in this great country that cannot support the best educated physician. But the American Medical Association at least can stand firmly for safe, sane and sound practitioners. To my mind, one of the most important functions of the Council is that it has established a monitorship over medical schools. Let the Council give to the profession, and to the public if necessary, the facts concerning the various medical schools of this country; publicity will do the rest.

Free lectures to the public on selected medical subjects constitute one of the most useful methods of spreading information. These lectures should be given by men who are authorities in their subjects; and the experiment as it has been tried in various parts of the country, particularly in Chicago and at Harvard, has been a success. At Harvard during this last winter the lectures have been so popular that at times a hundred or more people have been turned away, being unable to gain admission. A wide range of subjects has been covered in these lectures. Many factors influenced the attendance: first, the subject selected; second, the individual who gave the lecture; and third, the condition of the weather. Sunday afternoon lectures were better attended than Saturday evening lectures. Inclement weather markedly diminished the attendance. The most conspicuous factor that influenced the attendance at the lectures was the co-operation of the press. For example, when a lecture was given on a subject of great public interest, then if the press devoted from a half column to three columns to noticing it, the stimulus to the attendance at succeeding lectures was marked. Personally I have had nothing to do with these lectures, but I believe that they can be made effective almost in proportion to the co-operation of the press.

The medical profession and many of the public are afraid of the press. Whether this position on the part of the public is justified or not need not be discussed. I have never had occasion to appeal to the press for assistance and co-operation in any public measure without receiving hearty, but at times, to my mind, indiscreet assistance. The position of the press, as I understand it, is that it is the judge as to what constitutes news. Newspapers will publish what they think the public wants to know, but not what we think the public ought to know. They assume, quite properly, the right of decision. The greatest power that we can have to diffuse information is the public press. Let us be frank with it, and I believe that it almost invariably will be honest with us. *Collier's Weekly* and the *Ladies' Home Journal* have been wonderful forces in diffusing the truth.

There yet remains, ladies and gentlemen, a means of educating the public which I believe will be the most potent of all. This rests in the hands of the family physician, the man who has the care of the household, who watches the growth of the children, who sees the father and mother bend under the strain of life, react and again assume their work, the counselor of the family; he it is who can carry into the homes of this country the judicious truth concerning disease. Well-educated people have recognized that the wave of specialism which threatened to obliterate the family practitioner was dangerous for the welfare of the whole. The trouble is that we all consider ourselves, when ill, as peculiar examples of some disease, when, as a matter of fact, all we need is the counsel and advice of a sound-minded family practitioner who has known us and our families for many years. This does not in the least deny the great advantage of having the benefit of special knowledge in reference to a special subject.

There is a distinct reaction, I believe, against the obliteration of the family practitioner. The well-educated family practitioner now has a new duty. He it is who should be the instructor of the family. This is particularly true in relation to the subjects which in medicine cannot with propriety be taught the public in masses; these subjects may be taught most appropriately to the parents and, if need be, to the children by the physical counselor of the family.

A great duty rests on the practitioner of medicine to-day. He must not shirk it; he must rise to his new burden, accept it and bear it. The reward to the medical profession for taking this new burden of judicious publicity in medicine will be a broader life for the practitioner, a greater consideration for his fellow man, better citizenship and the recognition by the world that the medical profession is a great public benefactor.

YOUNG FOLKS' LEAGUE FOR THE HOME TREATMENT OF TUBERCULOSIS. — A Young Folks' League for the Home Treatment of Tuberculosis has been organized in New York.

## Original Articles.

### THE USE OF SILK LIGAMENTS IN ADDITION TO MUSCLE AND TENDON TRANSFERENCE IN INFANTILE PARALYSIS.

BY ROBERT SOUTTER, M.D., BOSTON,

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THE writer wishes to show a method he has used to overcome deformity in paralytic cases to supplant tendon and muscle transplantation.

The use of silk was first introduced by Professor Lange, of Munich. Later he advised the use of silk strands for relaxed ligaments. Since Dr. Lange's report the use of silk in tendon transference has been well established as a practical surgical procedure. Those who are familiar with the action of the old-fashioned seton will readily see the principle of Professor Lange's demonstration. He has shown by experiments on animals and by autopsy that silk causes the formation of a tough tissue which surrounds it and extends from its origin to its insertion. In other words, a strong natural tendon is produced throughout the length of the silk, which is substantial and tough. This new natural tendon not only reinforces the silk, but is sufficiently strong to take its place. The faults of the old methods of transplantation have been that the transplanted muscles were inserted into paralyzed tendons, which in time stretched. Excluding cases of faulty technic, many cases of muscle transference done by other methods have resulted well in motion, while the deformity, especially that of varus or of valgus, would persist to a greater or less degree. In these cases the transplanted muscle was not strong enough to perform both the function of motion and to hold the corrected position.

In paralytic cases there may be total paralysis of some or all the muscles, or partial paralysis of some or all of the muscles and deformity from the partial or total paralysis. For the purpose of treatment this divides the cases practically into five classes.

Class 1. Those cases where muscle training pure and simple is sufficient to increase the strength of the paralyzed muscles and to correct the deformity.

Class 2. Those cases where groups of muscles remain paralyzed and other groups are strong. When the acute stage of the disease is over, it is advisable to use massage, electricity and muscle training. When a sufficient time has elapsed, to be sure that nothing more can be gained, the resulting paralysis and deformity can be effectively treated by transplantation of one or more muscles to take the place of those that are paralyzed.

The point at which the transplanted muscle is to be inserted is selected, so that in doing its new work it will not only take the place of the paralyzed muscle, but overcome the position of the deformity. In this class the use of a silk ligament is advisable when the deformity is great, or when the transplanted muscle cannot reasonably be expected to correct the deformity, though it will take up the new motion.