Address.**ON SOME RELATIONS OF THE PHYSICIAN TO THE PUBLIC. DUTIES AND OPPORTUNITIES.***

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WHEN, a year ago, you honored me with the invitation to deliver this address, it was my intention to speak on some specific problem in medicine. On further reflection, however, it has seemed wiser to take advantage of this occasion to express a few thoughts on some of the public relations of the physician, — his duties and his opportunities.

The physician has always been and, from the very nature of his calling, must be more or less a public character. In the smaller community he is a public character in the sense that he is a common source to which the citizens repair for advice, not only concerning their physical and mental, but often also their material, well-being. In the larger centers of population he is a public character in that it is on his direction, on the results of his studies and research, that the community depends for the organization of those more general, broader sanitary measures which are demanded to meet the exigencies ever arising and multiplying with the growth of large urban communities.

In the early days of this country, when there were no large cities, the physician exercised this influence individually among his patients, as the family friend and adviser. With the growth and development of the nation, the great relative increase of the urban population, the multiplying complications of our life on the one hand, and on the other, with the enormous advances made in the knowledge of the nature and sources of disease, of the relations of physiology and pathology to other natural sciences, together with the rapid progress in the art of medicine and surgery — with all this growth, this expansion — yes, one may almost say, transformation, the functions of the physician have considerably broadened. In the old days the tree of medicine was a small affair; its roots ran wild and almost uncared for, and the physician gathered and used its fruits as they grew. The art which he sometimes showed in the employment of these fruits, such as they were, was, indeed, remarkable. Of the tree and its roots which contained the sciences of anatomy and physiology and pathology, he knew little. But through the years, patient students have gained wonderful knowledge of the nature of that tree; of the sources from which it draws its strength; of the extent and ramifications of its roots; of their intimate and intricate entanglement with those of almost all the other denizens of the garden of science. And with the multiplication of these researches and discoveries, the tree, nourished and cared for as never before, has undergone a great transformation; it has put forth new branches; new shoots have sprung up about it; and the fruits which it bears for the art of medicine and surgery surpass, almost, that which one might have imagined but a few years ago.

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The development of hospitals, of laboratories, of institutions for the study of the ever increasing ramifications of anatomy, physiology and pathology — ramifications leading directly to botanical, physical, chemical and, indeed, even to mathematical problems — calls for an increasing body of students, physicians who accomplish their function, and a most important and radical function it is, in the study of special scientific problems, a life widely different from that of the country doctor of old.

Moreover, the advances and extension of the medical and surgical art are such that it has long been impossible for any one man to develop equal proficiency in all its branches. In all large centers of population, therefore, certain men have sought to devote themselves to special subjects, in order that they may in this manner acquire a greater proficiency, and do more perfect and thorough work. This is natural and proper; it is only by the labors of such special workers that any art can be perfected.

At the same time, the crowding together of the population into great cities, a tendency which is to-day especially striking, has brought with it new dangers. The poisoned well may affect one or two families at most. The poisoned water supply of a great city may affect thousands. Scarlet fever in the country town has few victims and may be more or less readily controlled. In congested tenements populated by ignorant and suspicious aliens who do not understand the language of the people among whom they live, it is a widely different problem. These new dangers involving the broad questions of public health and prophylaxis, questions of drainage, of water, of milk and food supply, of the care of contagious diseases, — these demand the individual attention of men who have had special training. The great questions of water supply and of drainage cannot be attended to properly by the engineer alone, nor can the protection of the city from epidemics of infectious disease safely be entrusted to boards of health consisting only of public-spirited citizens; both are dependent on the advice and assistance of the trained sanitarian.

In almost all large enterprises to-day the aid of the physician is sought, as, for instance, in the organization of the relief departments of great railways and corporations and in large department stores. The health and comfort of the employee and the profit and success of the employer are indissolubly interwoven. But the distinctly public duties of the physician are by no means confined to exigencies arising in large centers of population. There are, in the history of mankind, examples of the gradual or sudden desolation of extensive districts by the insidious influence of diseases which we now know to be in great part preventable.

A recent historian¹ has brought forward as an illustration of the possible influence of a preventable endemic disease, the history of the decadence of ancient Greece.

¹ Jones, Ross and Ellett: *Malaria. A Neglected Factor in the History of Greece and Rome.* 12mo. McMillan and Bowers, Cambridge, 1907; Jones, Janus. *Harlem*, 1907, xii, 690.

To-day, as is known, malaria is the scourge of the Hellenic peninsular. Endemic throughout the land, it saps the vitality, the strength, the virility, of the people, carrying away, annually, its tribute of thousands of human lives.

Through the shadows of departed years the light of ancient Greece shines with undying luster. The language, the poetry, the art, the philosophy, the ideals, the spirit of beauty, have been for ages and are to-day the inspiration of mankind. The sounding hexameters of Homer, the breath of

"Him Æschylus, ancient of days, whose word is perfect song,"²

the creative genius of Phidias, the eloquence of Demosthenes, the wisdom of Pythagoras, of Socrates, of Plato, of Aristotle, beckon across the centuries to remind us that all the wealth of modern worlds has given birth to no loftier thoughts, to no higher ideals of life and beauty, than those which sprang up by the waters of the blue Ægean. And to-day, as ever, Pallas Athene, "*née intelligente chez les Grecs heureux*,"³ dominates the elect of the world. "The garnerers of Sicily are empty now, but the bees from all climes still fetch honey from the tiny garden plot of Theocritus."⁴ There is no trace in the literature of the early days of ancient Greece of the scourge which has since laid waste the land. Malaria appears to have been introduced into Attica during the fifth century B.C. Although the conditions of the soil and the probable presence of anopheles must have been favorable for the spread of the disease in the greater part of the Peloponnesus, yet the first mention of its occurrence is, apparently, in the Wasps of Aristophanes (422 B.C.). But the writings of the fourth century B.C. give evidence that the disease had gradually spread until, finally, it became chronic and endemic, prevailing among the children, giving rise to cachexia, conquering of the peninsula. And step by step, with the spread of the disease, the historian traces the beginnings of that fatal degeneracy which mark the fall of the race. A spirit of criticism, of jealousy, of pessimism, arose; discord, disunion and civil strife followed, and in a few centuries the earthly abode of the gods was a mere tributary of the Roman Empire. Poisoned by the subtle influence of a preventable disease, the spirit which had produced the science, the beauty and the art of ancient Greece faded from the world.

True or fanciful as this suggestion may be, it is hardly an exaggeration of what a preventable infectious disease may do. And one can but ask himself, What might have been saved for the world had we known then what we know now?

To-day, with an educated and specially trained body of medical men, assisted by an enlightened government, the Italians have reduced the mortality in the fever-ridden parts of their neighboring peninsula two thirds in five years; and the task is but begun. Already in regions where

agriculture was abandoned, work is being renewed and a fresh life is springing up.

There is a modern example which touches us closely, of a great undertaking — one of the greatest undertakings that man has ever essayed — which depends for its success largely on the labors of physicians. I refer to the digging of the Panama Canal. The French, with unexcelled mechanical skill and energy, had failed — failed largely because of the dreadful and continued mortality among the workmen. The United States took up the work. In the meantime there had come the great discoveries of Ross and Grassi and Big-nami and Bastianelli, completing those of Laveran, concerning malaria, and the vital and illuminating contributions of our own Reed, Lazear, Carroll and Agramonte, with regard to yellow fever. And to-day the Panama Zone compares favorably as to sanitary conditions with the more healthy parts of this country. Yellow fever, though on all sides, is here unknown. It is the greatest triumph of preventive medicine that the world has ever known.

And to whom is this due? A few months ago I had the good fortune to listen to an account by a distinguished foreign physician, of the work at Panama, whence he had just returned. After speaking with warmth of the general conditions, he said impressively, "The successful completion of the Panama Canal *depends on one man*." If the measures admirably planned and carefully carried out by Colonel Gorgas fail, if there is a moment's relaxation, if the old epidemics recur, it will be impossible to find laborers, and the work will fail again as it did before. And he did not exaggerate. It is on the success of these prophylactic measures which can be designed and carried out only by a specially trained sanitarian, that the completion of this great undertaking depends. It is to the lasting credit of our country that medical men should have urged and our President recognized the importance of the appointment of a physician on the Panama Commission.

There is yet another opportunity for public usefulness in this country, for which the training of the physician is peculiarly valuable. I refer to the career of the legislator. One has but to consider the few examples already mentioned of the various ways in which medical knowledge and skill are of value to the state, to realize how useful the education of a physician may be as a preparation for public life. The life of a physician not only prepares a man to treat wisely those more specific and practical questions of which we have just spoken; more than this, no career brings a man into closer connection with his fellow; no career gives him a more intimate knowledge of mankind; no career is more fitted to develop those qualities of charity and tolerance so vital in our best public servants. It is true that medicine and public life are equally jealous mistresses, and that few men can serve both as they would and should be served; but we have, in this country, hardly realized how valuable a preparation for public life is the training and career of the physician. One has but to look to the prime

² Swinburne: The Altar of Righteousness.

³ France, A.: Discours prononcé à l'inauguration de la statue d'Ernest Renan à Tréguier. 12mo, Paris, 1903. Calmann-Lévy, 40.

⁴ Lowell: Harvard University. A Record of the Commemoration, etc., of the Founding of Harvard College. Cambridge: John Wilson & Son. 1887.

minister of our sister republic in Europe for a most brilliant example of what may be accomplished in modern political life by the man with a medical training.

It is doubtless true that the development of the purely scientific branches of medicine, together with the multiplication of specialties, which is everywhere observable in our large centers of population, have resulted in a relative diminution of the number of family physicians in the old sense of the word, and have, in so far, limited the public influence which the old-fashioned general practitioner formerly exerted among his patients. But, on the other hand, there have developed many wholly new problems which are calling the physician more directly into public life. If, perhaps, the wholesome influence of the family doctor is less felt in the community than it once was, yet the opportunities for public service, which are to-day before the physician, nay, his public duties, have greatly increased.

The knowledge gained during the past forty years has taught us that we can accomplish far greater results by preventing disease than by attempting to promote recovery from that which has already started; it has taught us that a large proportion of the gravest maladies from which humanity suffers are acquired through our ignorance and carelessness and unclean habits; and with regard to many of these diseases, it has given us efficacious methods of prevention. Prophylaxis is the watchword of the day. We have in our hands the means, not only of delivering ourselves from dreaded epidemics of exotic pestilence, but of preventing largely the terrible yearly sacrifice to the contagious diseases which have for ages been endemic among us. But this deliverance can be brought about only through the united and conscientious efforts of the medical profession.

This is an age of combination and concentration and co-operation, of large associations and undertakings. The great growth of this association which we have known of recent years is but a feature of the times. Despite the increasing diversification of our interests, we physicians have been brought closer together than ever before, and to our lasting benefit. For wherever medical men come into social contact one with another they cannot fail to feel a warm pride in their calling; they cannot fail to be impressed with the earnestness, the simplicity, the honesty, of the character and aims of their fellows, with the realization that, despite differences in natural endowment, in advantages, in surroundings, in temperament; despite the fact that we are all human and possess our fair share of human frailties, we are, with singularly few exceptions, all working earnestly, as best we can, in the search of truth and for the good of humanity. Association and acquaintance deliver us from doubt and suspicion and jealousy, those all-pervading daughters of isolation. Our great association has further enabled us to distribute to all parts of the country an admirable journal, which is a monument to its honest, faithful, fearless editor,

so that the practitioner in the distant rural community may reap at the earliest moment the benefits of the discoveries of the student of the urban laboratory. It enables us to lay with greater force before local and national legislatures necessary measures of sanitary reform. It helps us to combat more powerfully the many forces of evil which, from time immemorial, have battered on the credulousness and superstition of the invalid. It is helping us to teach the public with greater impressiveness the necessity of high and uniform standards of education for the physician and requirements for the license to practice medicine.

Here we are, then, a great body of medical men, united in an association, not for our personal, financial, political or social advancement, but solely in the cause of truth and for the benefit of humanity, the deliverance of the public from disease. Nevertheless, the work before us is unending, the obstacles great. But why should there be obstacles? Why have not the recommendations of this association the force of law? Why is it that, when laws themselves exist, all our strength is needed to secure their enforcement?

The main cause, I take it, of all this is the lack of comprehension on the part of the public of the nature and aims of medicine and of physicians. If the public had but a small part of the information which is ours, how many thousands of lives might be saved every year! The community as a whole has a very vague understanding of the nature of the medical sciences and arts. Under these circumstances can we expect such a public to sympathize with and blindly follow all our recommendations? Surely not.

In how many ways is this ignorance shown! To take but a few examples:

We know well enough that the one successful way to prevent the spread of many contagious diseases in the large community is the establishment of well-conducted hospitals in which the patients may be isolated as soon as possible after the breaking out of the malady. By providing for the early segregation of these patients in institutions, offering to the sufferer the most enlightened care, the community confers a blessing of incalculable value on the families of rich and poor alike. Such hospitals, moreover, afford the only opportunity for the proper instruction of students of medicine in the diagnosis of those contagious diseases, the early recognition of which is of such vital importance to the public. Furthermore, we know that such institutions are absolutely without danger to the neighborhood in which they are situated. The records of the city of Boston, which possesses a model hospital for contagious diseases, shows well what a blessing such an institution may be to the community.

But I know another great eastern city where there has been, until recently, no provision whatever for the care of contagious diseases. More than this, some years ago the state legislature passed a law forbidding the erection of a hospital for contagious diseases within the city limits without a two-thirds majority of each branch of

the city council, that which rendered the erection of such a hospital almost impossible. To us this law seems wicked and brutal in the extreme — worthy only of savages. And yet the measure was passed by men who were not inhuman; they were simply ignorant. And it is difficult to remedy such ignorance by immediate argument. The vehemence which are we too apt to display only excites the sensitiveness of the legislator — and where passion enters in reason passes out of the door.

I know again a great city, the water supply of which is open to serious contamination. At a period during which extensive and radical public improvements were under consideration, a meeting was held of a committee appointed to take counsel as to those steps which should be taken to improve the water supply. Before this committee there appeared a number of medical men and sanitarians, including representatives of the state and city boards of health, men who had made a careful study of such matters. These men urged that steps be taken to provide ultimately for a proper system of filtration. After they had spoken, a gentleman connected with one of the city departments, an engineer, who had the last word, made a long address, in which he denied with passion that the water supply was or could be contaminated. He ridiculed the statements of the sanitarians and physicians, opposing to them the frequently repeated and wholly unfounded assertion that they were dealing with theories, he with facts. The committee, by an overwhelming majority, dismissed, for the time being, the question of filtration. The city, fortunately, has not yet suffered from the epidemic which may come at any time. The men on that committee were not unintelligent; they were simply ignorant of the medical aspect of the question at issue, and were utterly deceived by a plausible argument filled with pseudo-scientific statements which the orator himself appeared not wholly to understand.

A few years ago I happened to meet, on the railway, a high official of a large manufacturing concern situated in a most malarious district. At that time little had been done to protect the employees, who were nearly all victims of the disease. "This is a healthy enough place," said the official, who lived in a well-netted house in a dry part of the town. "The trouble with the people here is that they take too much quinine. If they would stop taking quinine they would stop having malaria." And this was a really intelligent citizen.

How often again do the trustees of large hospitals generously seek to "protect" the patient from what they regard as inconsiderate and unnecessary scientific zeal, by closing the wards to instruction and denying admission to student assistants, thereby blindly cutting off from the sufferer the greatest boon that they could offer him, — the most enlightened observation and care. How far are these good men from a comprehension of the true significance and value of the hospital to the patient and to the public!

There could be no more striking example of the ignorance of a well-meaning part of the community than the agitation of the so-called antivivisectionists, whose publications, shocking and wicked and brutal as they are misleading, are yet believed by some misguided people. But these dreadful publications, inspired for the most part by individuals who probably mean to be honest, are but the offspring of fancy and prejudice, born themselves of an utter ignorance and misconception of the aims and significance of medical science and of the character and ideals of the student.

These are but a few examples, but they are enough to show how little a considerable part of the general public — often individuals in whom we might, indeed, expect more enlightenment — understands the nature of medicine or sympathize with the generous efforts of the physician and the investigator. We can hardly expect people with ideas such as these to heed the advice of a body such as ours. These considerations should bring home to us the realization that the education of the public is a most vital duty, not only of medical schools and associations, but of each separate member of the medical profession. On each one of us there rest public duties of the gravest import. On the sum of our individual efforts depends the success of all the great sanitary reforms of the future.

On a few of the opportunities which come to the physician of to-day, in his intercourse with his patients and his friends, to perform some of these public duties, I would especially speak.

Many misconceptions concerning the nature of the healing art arise from that strange atmosphere of mystery which so often surrounds medicine. To physicians there is nothing mysterious or supernatural about medicine. We recognize that medicine is a practical art resting on a basis of scientifically proved facts; we realize that our knowledge amounts to an infinitely small part of that which we would know and hope some day to know. We know that there is an enormous field for study. We practice our art simply on the basis of what we have learned from the experience and study of those who have gone before us, and on what we acquire daily from our own study and experience and reason and common sense. But from time immemorial the art of medicine has been connected in the mind of man with the supernatural and the divine. Medicine has been regarded rather as a matter of faith than as an art resting on a scientific basis. People speak of their "belief" in this, that, or the other "system" of medicine, and on the basis of such "belief" recklessly hand over their bodies to some individual who asserts that his practice is based on a theory or system revealed as by inspiration to some fortunate mortal, perhaps yesterday, perhaps two hundred years ago.

This blind faith in systems is not so far removed from the faith of the savage in the magic of his medicine man, and when we turn to our friends who with such delicious innocence and ingenuousness have termed their medical faith a "science," when we see them, as we sometimes do, braving

with fanatical contempt some dreadful infection only to find themselves in the end the prey of the fatal poison of reality, we seem almost to see the medicine man standing with a little group of determined warriors in the midst of the circle of fire, breathing defiance even as he falls, his "invulnerable" mantle pierced by a score of deadly bullets.⁵

Again, there is a very general idea among the public that the physician is by practice, if not by nature, disingenuous; that while he may be trusted to do his duty as he sees it, to his patient, truth is not to be expected of him. Scarcely a week goes by that I am not asked by the friends of a patient to tell a deliberate falsehood.

From these misconceptions we physicians cannot, I fear, be regarded as wholly guiltless. We know how few specifics there are in medicine. We know that by simple physical and mental means we accomplish our main results. But, alas, how easy it is to accomplish these ends by misleading means! How easy it is to write the prescription which we know is of itself of little value, which we should never dream of taking ourselves, and to allow the patient to believe that it is this that has "cured" him of the transitory, self-limited malady! How easy it is by assuming an impressive air — and if there be anything under the sun that we physicians should pray to be delivered from it is an impressive air — to make the patient feel that we possess that mysterious power which has, perhaps, come to us from a long line of medical ancestors, the power which enables us at a glance to divine that which might never be revealed to our uninspired colleague.

The same results can be achieved without misleading the patient one iota. It is perfectly possible to treat patients as we would be treated ourselves. It is scarcely likely that they would be treated otherwise. It takes a little longer; it involves a little more explanation; but how much safer and surer is the result!

The oracular method is easier, but I fear that some of us have forgotten that by a special decree of the Olympian Assembly, Asklepius was forbidden to trade in oracles.⁶ That it is necessary for the physician to tell untruths is a myth founded on kindness of heart, pure and simple, but an unreasonable and a weak, a short-sighted and a misguided kindness of heart. Truth is as sacred a duty in medicine as anywhere else in life. As a matter of policy, as Cabot has pointed out, it is almost a necessity, for whatever may be true in other spheres of life, *the doctor's lie is always detected*.

It is, of course, obvious that truthfulness in medicine does not mean that it is always necessary to tell the patient that he has a fatal disease, if he does not ask you the direct question. Nor does it forbid the physician to seek and keep his eye fixed on the cranny of hope which may usually

be found, as earnestly and sedulously as would the patient himself. Few events in human affairs are certain. A few years ago I had under my care a patient who had had one tuberculous kidney removed some years before. She had then bilateral pulmonary tuberculosis, tuberculous pleurisy, tuberculous peritonitis and tuberculosis of the remaining kidney. The temperature for weeks had been constantly elevated, the pulse rapid and feeble. She seemed *in extremis*. Had I been asked, I should have said that she had probably a few weeks to live. She asked me calmly if she were going to die or whether there was any chance of recovery. I answered her truly that she was very ill, that the outlook was not good, but that there was always a chance for an arrest of the disease, and that it would be wrong even to think of giving up the fight. For two years that patient has been free from fever, to all outward appearances well, and to-day she is actually working for her living.

Few patients ask a physician the direct question, but when they do they should be told the truth, as we should tell the truth in every other sphere of life.

I believe sincerely that most physicians do so, and that the annoying general suspicion of the doctor's statements is ill-founded; but I know a number of good men who too often allow their kindness of heart to get the better of their good judgment. I know nothing sadder, nothing more hopelessly demoralizing, nothing surer to upset the mutual confidence of a family than the entrance of the "white lie" into the household or the sick-room. Few of us are unfamiliar with the hopeless uncertainty of the invalid who comes finally to realize that a tissue of falsehood has been spun about him; that on no one can he rely. The affection of those about him he may not doubt, but of their sincerity how can he again be sure? There is no more pathetic picture in the experience of the practitioner of medicine.

The physician has no higher public duties than *the duty of simplicity, the duty of the avoidance of mystery in medicine and the duty of truthfulness*. Toward his patient I know of no more vital duty than *the duty of optimism*.

There is another widespread misconception to combat which is an important public duty. I refer to the too common feeling of the public that, with many of us, the practice of medicine is purely and simply a trade. Viewed in this light, the practitioner can but be often an object of suspicion. His methods and his word are doubted. The best part of his influence is gone. There are few, if any, physicians who practice medicine as amateurs. The inconveniences which every earnest doctor must endure are always considerable. Most physicians are obliged to depend on their fees, as most clergymen are obliged to depend on their salaries, for their daily bread. They must provide, not only for themselves, but often for their families. There are many men to whom, for more reasons than one, the material gains from practice are an important, a highly important, element in life. There are many men,

⁵ I have seen in the possession of a friend the "invulnerable" mantle of an Indian medicine man who with a small group of warriors fought until the last man had fallen, although completely surrounded by troops; the garment was pierced by many bullets.

⁶ Lucian: *Lucian's Dialogues*, translated by Howard Williams. London: Geo. Bell & Sons. 1893.

teachers, scientific workers, men who desire to limit their practical activities, as well as men who have achieved such a position that they are obliged to restrict or select from the overwhelming practice which seeks them, who, for these very reasons, rightly demand large fees. If the public insists on having their services rather than those of the many other good men in the profession, they should and do understand that they must pay a larger honorarium. This is perfectly right and proper. But there are very few physicians who enter into the practice of medicine with the idea of laying up wealth. There are happily exceedingly few to whom medicine is a trade. The man to whom the scientific and humanitarian aspects of medicine mean nothing; the man who practices solely for what he can make; the man who finds no interest in medicine outside of that which he puts in his pocket, — that man is on a level with the conscienceless quack, and the sooner he leaves the profession the better for it and for the public.

There exists, however, a tendency among some of us — men who are, for the most part, honest and honorable — which is, it seems to me, below the dignity of our calling. I refer to the tendency to regulate one's fees according to the means of his patient. It is well that a man should have a more or less definite estimate of the value of his services, a fixed maximal charge for work of a certain character, a charge which, in justice to himself, he should always make, unless he has reason to believe that the patient is not in condition to meet it. He will often, with a large proportion of his patients, perhaps, be obliged to accept less than the value of his services. But that he should speculate on the wealth of the rich, that he should demand exceptional recompense from the millionaire because of his wealth, is to make medicine a trade; is to bring distrust and suspicion and discredit on his profession; is to put a serious obstacle in the way of all the great reforms which we as physicians and sanitarians hope to accomplish.

Another duty, the grave public import of which comes to us with much force to-day, is the instruction of the public with regard to the necessary measures of prophylaxis in connection with infectious diseases. As has been demonstrated again and again, general laws and sweeping public measures are of themselves insufficient to prevent the spread of such diseases as malaria, yellow fever, plague, cholera and typhoid fever. It is only through the cordial and general co-operation of the practicing physician with an enlightened public that efficient prophylaxis can be established. It is impossible here to enter into particulars as one would. We can consider but a few examples. The great accomplishment of the medical department of our army in eradicating yellow fever from Havana is fresh in our minds. This work was rendered possible by the recognition of the fact that the causal element of yellow fever exists only in the body of the patient suffering from the disease and in the mosquito (*Stegomyia fasciata*) which has fed on the blood of the

sufferer. The mosquito can acquire the infectious agent only from an individual affected with the disease, and the human being can acquire the disease only through the bite of an infected mosquito. Though a great deal can be accomplished by general measures directed toward the destruction of mosquitoes and the removal of breeding places, it is impossible, by these measures alone, to overcome an epidemic. The problem, it was realized, could be met satisfactorily only by sterilizing, as it were, each individual case of the disease. If each case of yellow fever could be successfully protected from mosquitoes, one might be sure that, from this case, at least, there could be no spread of the disease. And so, by the co-operation of local physicians with the efficient medical corps of the army, every suspected case of yellow fever was reported. The houses of patients, together with those in the immediate neighborhood, were promptly netted and the mosquitoes already there were killed. In seven months the disease was banished from the city. Almost equally brilliant was the work in New Orleans, where a dreadful epidemic, already well under way, was eradicated by a period at which otherwise it would probably have been at the summit of its ravages. This problem, it is true, was an essentially simple one, once the fundamental knowledge of the manner of entrance and spread of the infection had been acquired. In its broader lines, however, the problem is the same in connection with many of the gravest and commonest affections with which humanity suffers. In malaria the task of prophylaxis is more difficult because the disease is so widespread, and for the reason that, because of its very mildness, many cases pass unnoticed. And yet how much can be done, and is being done in some parts of the world, has already been mentioned. In typhoid fever the problem is yet more difficult; in tuberculosis more so again.

But in all these diseases, as soon as the physician, the public and the government unite and work hand in hand to prevent, so far as possible, the spread of the infection from the individual case, enormous inroads can be made into the mortality. In all these conditions the infectious agent dies sooner or later outside of the animal body and is disseminated primarily by the infected human being and, in the case of tuberculosis, to some extent, by cattle.

To properly combat the spread of preventable infectious diseases we need: (1) An enlightened public; (2) a conscientious and united medical profession ready to do its duty as individuals and especially to work in a spirit of cordial co-operation; with (3) central and local boards of health which are under the direction of trained sanitarians.

The organization of all these measures depends, in the end, on the results of our individual efforts as physicians. The education of the public can be accomplished only by us; and it is our duty privately, publicly, day in and day out, to explain to the people the rules of self-protection. The faithful performance by us, as physicians, of the

necessary measures of prophylaxis in every individual case is almost the corner stone of the edifice. These duties, it is true, greatly complicate the life of the physician. The measures which we ought to carry out, and which can perfectly well be carried out in every case of typhoid fever, are tedious and annoying, but they are no more so than the aseptic and antiseptic precautions employed daily by the surgeon. They are duties which we must recognize unless we are content to lose, as we do every year, thousands of the very flower of our youth through the preventable diseases; unless we are content to remain as we are now, one of the few nations in which the disgraceful prevalence of typhoid fever, a filth disease, is a byword throughout the civilized world. Isolated, individual effort, however, goes but a short way of itself. We must co-operate with one another and with our boards of health; we must work in unison and see to it that as in the case of scarlet fever and measles and diphtheria so every case of typhoid fever and tuberculosis is reported and the proper measures of prophylaxis taken.

And lastly, the character of our state and local boards of health, that most vital point, depends largely on the attitude and efforts of the medical profession. After what has been said it is hardly necessary to refer to the increasing importance to the community of local and central boards of health. It is on these bodies that we depend for the organization and direction of the more comprehensive measures of prophylaxis, the need of which is increasing daily with the greater complications of our life and the advances in medical knowledge. Moreover, in recent years, departments of health have assumed a wholly new significance with the establishment of diagnostic laboratories. Modern methods of diagnosis, microscopical examinations of sputa and of the blood, bacteriological examinations of smears and cultures from the throat, tests for specific agglutinins in the blood in fevers are too complicated and time-absorbing for the busy practitioner. Much of this work is done in private laboratories by specially trained men. There are, however, many who cannot afford the additional expense of such examinations, people who are not objects of charity and who can and do bear the ordinary expenses incident to their medical attention, as well as many who must always be cared for by the benevolence of the physician or at the public expense. But it is absolutely necessary, not only for the sake of the patient, but also for the protection of the public, that these more precise measures of diagnosis be carried out so far as possible in all suspicious cases. If they are not carried out, a vitally important link is removed from the chain of our public measures of prophylaxis. And so it has come to pass that state and county and city boards of health are everywhere wisely establishing laboratories in which such examinations are made at the request of the attending physician. Now it is clear enough to any mind that the direction of such boards should be in the hands of men with a special training as

public sanitarians, pathologists and bacteriologists. That these facts are not wholly appreciated by the general public, that the pernicious influence of political favoritism now and then plays a part in the selection of such bodies, need not be mentioned. But I wish to assert and assert emphatically my conviction that, as a people, we are too fond of using the word "political" with a smile of contempt; we are too fond of speaking lightly of the conscience and honesty of the politician. Few politicians would voluntarily prostitute a branch of the public service which is so vitally concerned with the welfare and safety of the community. I have rarely met men in political life who did not pay considerate attention to the judicious and tactfully offered advice of conscientious physicians. It is for us physicians to set them an example. We know — every one in this hall knows — the kind of man who should preside over a department of health. And yet, what a spectacle do we see with changes of administration, in almost any of our cities. Applications from busy practitioners; from men who, perhaps, from age or infirmity, desire to retire from active work; from men who have been unsuccessful in practice and are in need of money! How is the politician to know what to do if we behave in this manner? We physicians do not always realize the responsibilities which rest on us in this connection. We ought to act and speak fearlessly and frankly, so that men obviously unfitted shall be ashamed to offer themselves publicly for such positions. We ought to see to it that the representatives of our profession on such bodies are capable and well-trained men; men who can give to their work all their time, all their thought, all their energy. This again is a public responsibility, a public duty which falls upon each one of us as a practicing physician.

Another opportunity which comes to us as individuals is the opportunity to help forward the movement, now happily started, for better instruction in our schools of medicine by increasing the opportunities for practical clinical experience. We all know that we improve in the art of medicine only by the actual study of disease and the observation of the effects of treatment. Rule and precept may help; they cannot make the physician. Where, in our country, has this practical experience been offered? In but a very few of our schools have the students had an opportunity to follow at the bedside the course of the more serious diseases with which they are to meet in after life. I myself was never offered the occasion of following a case of pneumonia or diphtheria or typhoid fever from beginning to end. Where then were the students of my day expected to gain this experience? Where? Why, on the unfortunate human beings who might fall into their hands during their early years of practice. And why was this so? Simply because students were not allowed in the wards of the hospital, except as they followed an occasional visit. Now, in this country there are hospitals enough and more than enough to supply valuable clinical experience to all physicians while they are

yet in their undergraduate days. This opportunity is lost because the public does not understand. "What," says the hospital trustee, "do you fancy that I want students to attend me or the sick men and women under my protection?" "Student" to them suggests an irresponsible youth who is conducting perilous experiments. And the student is excluded from the wards. They do not understand that the student, as a clinical clerk in the ward, is nothing more than a trained assistant. They do not realize that the presence of such students is not an experiment; that the system of clinical clerks has been in existence for years in England to the great advantage of physicians and community. The student is excluded from the wards; and what is the result? The "protected" patient enters the hospital, where he is under the direct charge of an interne, a recent graduate from a school where he has been denied the clinical advantages which he is now for the first time enjoying. He is, however, now in a position of considerable responsibility, for his busy chief can spare at the most an hour or two for his daily visit. He has many patients to care for, and little help in emergencies. He does his best, and in the midst of his multifarious duties the early symptoms of the typhoid perforation are perhaps unobserved, or probably, as he has never seen a case before, unrecognized. The dreadful reality comes upon him when it is too late. The young physician has learned something that he will never forget; but the patient? The patient is dead—his one chance, that of an early operation, lost; sacrificed to the well-meaning charitable ignorance of the public. Suppose, on the other hand, that the patient enters a ward in which there are a number of medical students on duty as clinical clerks and presided over by a similar young physician, a recent graduate, but one who, in his school days, has had some months of practical experience at the bedside. Under the watchful eye of the student who has but a few patients to follow, who is, as has been said, but an extra assistant, a trained assistant, the first suspicious symptoms are noted. The attention of the interne is excited. The blood is carefully examined from hour to hour. The surgeon, early notified, joins in watching every change, and, by a timely operation, the patient is saved. What a different picture! "Fancy," one may say? No. Experience; personal experience. How, under these circumstances, can the public object to the presence of the student? Solely because of a word, because of the word "student," which means to them an irresponsible observer. As a busy, active assistant under the direction and orders of a trained superior officer, would the public object to his presence? The question is too absurd to ask.

In these matters we as physicians must teach our non-medical friends. When they realize that the hospitals *need* medical students as trained assistants, as a part, really, of the staff; when they realize that the students *need* hospital experience to make them capable physicians; when

they realize that they *owe* this training to the physician in order to protect themselves and the public,—then and only then will the old opposition to the instruction of students in the wards of hospitals disappear. The prejudice against ward teaching is largely a matter of words, of one word, the awful word, "student," in its absurdly perverted popular meaning. And while, incidentally praying to be ourselves delivered from the tyranny of words, let us strive, each one as he can, to educate the public in this important matter, to help forward the movement which has already begun toward the more complete utilization of school by hospital and hospital by school.

The mention of these few opportunities for public service, opportunities which come to us all as physicians, should but impress on our minds the thought with which these remarks opened, namely, that the physician is, from the very nature of his calling, essentially a public character. And however modest may be our field of work, our responsibility should always be before us. On our learning, on our progressiveness, on our alertness, on our honesty, on our fearlessness, on our perseverance, hang not only our own welfare, but that of the general public; in other words, that of our country, in much higher degree than we often realize. It is a heavy responsibility. Of much in the past we may be proud. There is much in the present on which we could improve. And the future? What shall that be? The answer lies with us.

Original Articles.

MODERN MEDICINE AND SURGERY IN THE ORIENT.*

BY J. EWING MEARS, M.D., PHILADELPHIA.

A RECENT visit to the Orient has afforded me the opportunity to study modern, scientific medicine as it exists there to-day. Through the courtesy of members of the medical profession and others, I was permitted to make extended observations of the conditions which are present, and which have exerted a dominating influence in the development and growth of scientific medicine in the East. I have chosen to speak of modern, scientific medicine in the Orient and not of ancient, empiric medicine, as the history of medicine tells us it existed from the earliest recorded period of time. In a paper which I read before the American Surgical Association, at the meeting at St. Louis in 1904, on the "Evolution of Surgery," I directed attention to the practice of the art of surgery at that time when it existed as an art and not as a science; and in considering the evolution, or the unfolding, of surgery, I endeavored to show that this was accomplished by a gradual ingrafting of the science, influenced greatly by important controlling factors, most importantly by the cultivation of human anatomy, so auspiciously begun in the great school of

* Read by title at the meeting of the American Surgical Association, held in Richmond, Va., May 4, 1908.