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from J. M. Da Costa

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TENDENCIES IN MEDICINE

THE PRESIDENT'S ADDRESS

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BY

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presented by the author

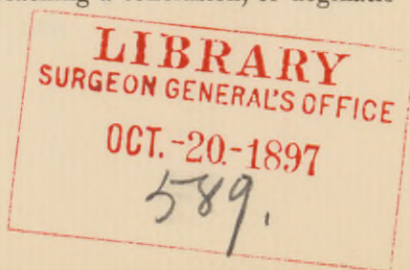
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TENDENCIES IN MEDICINE

It is expected of the President of your Association that he offer some remarks as introductory to the scientific papers that are to occupy your attention, and every presiding officer has done so, expressing himself on subjects for some time in his mind or to which he has been recently giving heed. Thus, diversified and excellent addresses have been made, some treating of medicine and its aims in a broad, philosophical spirit; some reviewing its achievements; others giving most erudite and valuable historical information. In my turn I ask that you will indulge me if I present a few thoughts on what seem to me in our science the best tendencies of the day, as well as on certain causes that, with all the wonderful work being done, and with the immense energy and industry of the devoted laborers in four continents, retard its still broader and steadier development.

The greatest advance of our time—it seems trite to mention it to such an assembly—is the ardent study of the causation of disease. Students have speculated in all ages on the causes of disease; but these have been, for the most part, half-hearted speculations, made so by the feeling of impossibility of reaching a conclusion, or dogmatic



assertions that, believed in for a time, soon became of interest only to the curious searchers for fragments on the shelving beach of science. Now, the recognition of minute organisms, their study, their artificial culture and modes of growth, their secretions, their chemical character, their likes, their antagonisms, have let us into the secrets of another world and are showing us the way in which infective maladies originate and the laws they obey. We are looking for infection in every disease; we are often keenly pursuing it where it probably does not exist; at all events, not in the shape of bacteria, which in our day we accept as a term almost synonymous with infection. A sense of causation, formerly deficient, has been replaced by a most acute sense, and by a desire for unrelenting search. What is still greatly needed is, I think, an appreciation of how infection may light up slow processes and lead to structural complications, such as are found, for instance, in the exanthemata. We have also much to learn of bacteria that exist normally becoming abnormal in certain perverted conditions, either in manifold growth, as happens with the bacillus coli communis, or in character. What we consider the cause may thus be only the consequences of disease. The soil and its forces, too, are to be studied and critically examined.

But the power of this little, invisible world is mighty. It is told of Napoleon that he could never understand the fame of Cuvier. He spoke of him, with something like contempt, as only occupied with small things. Yet smaller things conquered even him, the great conqueror.

It was the plague bacillus, not Sir Sidney Smith, that compelled him finally to leave Syria and give up his dream of subduing the East, like another Alexander.

Other than mere bacteriological work forms a most valuable part of the contribution of the laboratory to the investigation of disease, and in the last decade has placed this investigation on a much higher plane. The microscopical and chemical examinations of the secretions and excretions and of the blood have become our daily duty. The chemical examinations, which, dealing, as they may be made to do, with the constantly varying problems of life in disease, have been temporarily overshadowed by the ardor of bacteriological research, will, with widening fields, resume their former prominence. The time is indeed at hand in which, without the ready access to a laboratory manned by experts in all these lines, or the association with a trained laboratory assistant, no physician can do his patients, himself, or his science justice.

Closely connected with the laboratory investigation of disease, especially with its chemical investigation, is the study of the effects of the products generated by decomposition of albuminous matter, producing, when developed in the dead body, the substances known as ptomaines, when in the living body, as leukomaines. The recognition of these agents, so frequently poisonous, is explaining many obscure processes, is leading to new and close scrutiny of others and to search after means of neutralizing their toxic influence. It is with pride that this Association can view the history of this branch of re-

search, for the fruits it has yielded have been largely gathered by the efforts of some of its own members.

Another of the best results of the achievements of our time is seen in the effacement of the strict division between medicine and surgery, or rather in the recognition that there are no lines separating them, but lines becoming continuous, on which joint action proceeds. We see this in the whole clinical history of appendicitis and its progressive unfolding; the more the medical part is studied and rendered precise, the more exact become the indications for operation and the appreciation of the chances of this. The same may be said of abscess and of tubercle of the kidney; of the investigations of the character of effusions into pleural, or pericardial, or peritoneal cavity; and of many other well-known conditions that surgeons and physicians are now studying together. This new tendency is sure to counteract not only the excessive specialism of our day, but to give us once more broader physicians and surgeons, taking the keenest interest in each other's work.

One of the greatest improvements in our generation is in the much better appreciation and larger use of hygienic means, of systematic exercise, of baths, of regulated rest, of out-door life. Then, too, when medicines are given they are much more generally used singly, with a view to their direct effect, and not in excessive combination. Moreover, the substitution of extracts and of active principles for many of the nauseous drugs has taken away the terror and disgust with which medicines were regarded.

It is, from a pharmaceutical point of view, at least, no longer a punishment to be ill. The satire of Molière is lost to the playgoers of our generation. The highly appreciated answer of the Bachelor of Medicine, when examined for his doctor's degree, that the remedies are always "Clysterium donare, postea seignare, ensuitea purgare," would fall at present on totally unsympathetic ears; for now there are delightful capsules, and triturates, and pills of æsthetic colors—"dear little pink pills," as I have heard them called, though the dear little pills happened to contain strychnine. And the boy of the period is not tempted to view an open window as the only means of getting rid of the hated bottle; he may, indeed, want to take too much of it, because, with all its potency, it is sweet and pleasant.

The tendency of our time is to endeavor to overcome disease, and not merely to observe and palliate its ravages.

We are going back to the doctrines of our forefathers; abandoned for a time, because, with an expanding knowledge from the study of pathology, the means they possessed were found to be, for the most part, totally inadequate. Thus there was a period of nihilism and expectancy in therapeutics. But so-called rational expectancy is but a confession of impotency. Now, the tendency is once more aggressive. We are trying directly to choke or to subvert morbid action, and doing this partly through the old, transmitted remedies of former generations, but employed with a better understanding of their real quali-

ties, partly by new agents furnished by chemistry and by constant research in other fields. Of the former, the freer and more scientific administration of digitalis may be taken as an illustration; and the use of mercury, though in a different manner, is infinitely more prevalent than it was some years ago. To bleeding, too, I, for one, believe that we shall return; only it will not be the mere abstraction of blood perverted by disease, but there will be, with this, immediate attempts at the reconstruction of the blood by supplying it with the proper saline fluid and other ingredients. In the second class, the bromides, chloral, the nitrites, and nitroglycerin are prominent, as is a whole group of antiseptic agents. Many of these—it is especially true of the nitrites—have come to us from the physiological laboratory. One of the most interesting attempts at radical therapeutics is the endeavor to counteract the bacteria of disease by substances that form in the body which neutralize their toxic products. This antitoxin treatment is brilliant and hopeful, and is being tried in many affections, pre-eminently in diphtheria, in tetanus, and in erysipelas. It cannot be said that as yet it has led to any great results, though the evidence is decidedly in its favor in diphtheria. It seems scarcely worth while to push it in erysipelas—at least in erysipelas that the physician sees—for the mortality in this is, under any treatment, but very slight. How valuable the antitoxins will prove as preventives remains also to be solved. More productive thus far has been the use of attenuated virus, as, for instance, in Pasteur's treat-

ment of hydrophobia; the influence in cholera, in yellow fever, in bubonic plague, is now under keen observation. The effects on tuberculosis must be taken thus far as the expression of hope rather than of fact. The success of thyroid extract in the treatment of myxœdema is leading to the close investigation of the active principles supplied by other ductless glands. The next decade will prove whether the X-rays, which are making such wonderful additions to diagnosis, will also have their therapeutic triumphs. In it, too, we may look for some striking developments of suggestion, not only as explaining mental and morbid processes—what more extraordinary and thought-starting, for instance, than the recently tested production of special cutaneous affections by it?—but as a harnessed therapeutic force. All this is in the line of present investigation; and there will be much disappointment and wasted labor in particular points, but it is not too sanguine to believe that there will be also a solid outcome which will immensely advance scientific medicine.

There are, with all these tendencies of our day that work for good, some which, whether growing out of them or whether the exaggeration of old hindrances, have to be, in the interest of true science, strenuously guarded against. One that is very evident is the tendency to immediate generalization. The discovery of every new bacterium is supposed to revolutionize instantly the science of medicine, and is announced with all the air of the unexpectedness of genius. Fortunately or unfortunately, one may be discovered every day, and a man may thus find himself

with three hundred and sixty-five opinions on the tenets of his art in the course of the year; but this would not daunt the enthusiasm of the insatiate generalizer :

“Ten thousand great ideas filled his mind,
But with the clouds they fled, and left no trace behind.”

Fixity of opinion in medicine is a virtue, if the mind remain open to proof and be in sympathy with advance ; and it is this freshness of mind, joined to good judgment, through which is best estimated the true value of the many facts constantly discovered in an advancing science like ours. Clinical medicine, indeed, must continue to be the final court of appeal for the purposes of the practitioner of medicine. Before that court will come and be listened to with sympathetic interest, as eloquent advocates, those who are presenting the claims of special studies. But these must be well supported and judged in their bearing on the whole before new laws are laid down. And we see that the more we investigate and the more we know the more will old questions assume different aspects, the more they will have to be retested ; there is no finality—there can be none—in medicine. When the last word is spoken we shall have a perfect science ; until then there must remain for us a certain amount of empiricism, especially in treatment.

There is no doubt that, considering the amount of work done and recorded, medicine—especially clinical medicine—would be much more advanced if the records were differently made, and were not so vague as they often are.

What is more provoking than to see constantly such loose statements as this: "The examination was negative." Negative as to what? If applied to the action of an organ, as to what part of its action? If to secretions, to what part of their constituents? How much easier to say, even if it have been an incomplete examination, for what exactly they were investigated, and how much more certain to be of use for comparison in similar cases. Worse still is it with the records of treatment. This is an ever-recurring expression: "The usual treatment was employed." I saw this in a recent volume of *Transactions* with reference to the congestion of the lungs in typhoid fever. What is meant? Is there such a thing as a fixed treatment for it the world over? It might mean dry cups to some; ammonia, turpentine, digitalis, or yet different things to others. Then the utter absence of mention of doses makes it impossible to say whether any remedy was fully tested, or to compare its action when given in small or in large quantities. For very many purposes records, as published, are valueless; in truth, they impede progress, and a little care would make it otherwise.

Then there are records which, made even to the full limit of industrious exhaustion, are so badly and confusedly presented that they bury themselves from the start. A little more time spent on their expression might make them absolute and convincing. It would be, indeed, well if in all our professional literature there were something more of the learning of the scholar and the clearness

of the literary artist; men who followed the master, Harvey, in other points besides profound and productive research. A few more Watsons and Pagets, Trousseaus and Hyrtls would make knowledge easier to obtain, more constantly with us, forming much more a part of our daily life and application. It is true that if, in our science, we must choose between profound inquiry and its clear enunciation, we shall choose the former. It is a pity, and it is unnecessary, that there should be any occasion for a choice. The French, with their lucidness in scientific matters, set all other nations an example. The countrymen of Goethe, foremost in investigation, following his avowed contemptuous indifference to style, are the greatest sinners against clearness and vivid expression. They evidently believe in the reverse of the thought with which Johnson excused the inaccuracies in Goldsmith's *Animated Nature*, that, if he once began to make experiments, life would be too short for him to get his book written.

One more tendency of the day let me notice, which is not for good, and undoubtedly retards progress. It is the excessive publication of half-knowledge, of doubtful fact, and of loose inquiry. The propensity for authorship is an old disease, but it has assumed a development commensurate with the prodigious development of everything else in the age in which we live. It is harmless in journalism, less so in literature, but positively dangerous in science; for it fills this with immature or false observation, and takes the time of others to remove the obstructions placed in the stream of knowledge. With some, want of suffi-

cient training leads to it and absence of inquiry into what has already been ascertained; in others, it proceeds from a girl-like genius that, in place of letter-writing, pours itself out in medical periodicals, fascinated by penning sentences full of pseudo-scientific commonplace. It is far from being a disease only of the untried or ignorant; famed workers, too, may succumb to it, listening, perhaps, to the entreaties of friendly and sleepless editors. Who knows that it is not, after all, a physiological function, giving full play to brain-centres in very rare use—centres situated in what Oliver Wendell Holmes has called the idiotic area of the brain.

But whatever the retarding influences, they are not to any extent checking the onward course of medicine. The numerous inquiries, the keen experimentation and close research, the general thoughtfulness, are developing a resistless scientific method; resistless because it is true. Medicine is no longer an art founded only upon empirical observation, no longer a purely deductive science; it is becoming also an inductive one. The great body of the community is touched with friendly interest in watching its growth. With the advance of the scientific method special systems are crumbling; future ones are impossible. There can be no more pathies; the general intelligence will prevent it; for educated men are recognizing the broad base on which medicine is resting, and that truth is sought in it by the same means that are used in physics and in the highest development of other sciences. In our midst with all this, conviction is becoming clearer, purpose

waxing more resolute. We see, without pang, castles which have crowned rocks being turned into dismantled memories, because we know that something stronger, that will defy all time, will stand ultimately on the old commanding sites. Everyone of us must work until he discovers in his work his true self, and then aid with what he finds he can do best in helping all. With everyone of us there is a mission to assist the general advance.