

Seguin (E. C.)

THE CULTIVATION OF SPECIALTIES
IN MEDICINE

AN ADDRESS

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[Reprinted from the ARCHIVES OF MEDICINE, December, 1880]

NEW YORK
G. P. PUTNAM'S SONS
182 FIFTH AVENUE
1880



THE CULTIVATION OF SPECIALTIES IN MEDICINE.*

By E. C. SEGUIN, M.D.



Of the many practical questions which present themselves to the minds of students of medicine, and even more forcibly to the minds of young graduates, few, I take it, are more interesting than the one: "Shall I practise medicine in general, or become a specialist?"

The importance of this question seems to warrant my making it the text of remarks on this occasion when the Faculty of the College have delegated to me the pleasing duty of bidding you welcome.

The growth of specialism in medicine is quite modern, I might say recent, yet its germ is ancient. For example, in the celebrated medical school of Alexandria and among Arab or Saracen physicians in the first six hundred years of our era, we find mentioned as special practitioners, surgeons, lithotomists, oculists, and midwives. On the other hand, I doubt not but that more than one of the venerable pillars of our alma mater, the senior professors who are with us this evening, clearly recall the time when there were no specialists in the United States; a time when all practitioners of medicine, somewhat arbitrarily divided into the classes of physicians and surgeons, knew all there was to be known of medical science, and successfully enough practised in a

* Address introductory to the session of 1880-81, at the College of Physicians and Surgeons, New York; delivered October 1, 1880.

corresponding general way. Then no one devoted all his energies to the critical study of changes in the human cuticle, or spent hours peering into eyes with a little mirror, and racking his brains over complicated mathematical formulæ to correct nature's failure to produce a perfect eye. No one made it his exclusive business to light up, expose, and more or less barbarously medicate the various cavities and recesses of the human body, and no one (worst of all, I have heard it said) gave up all practice except that in connection with the nervous system. Were those the better days?

In the last thirty years all this has changed. Quite an army of specialists has sprung up all over the world; one specialty after another has made formal demands for recognition in the midst of the profession, and in the faculties of medical schools. Indeed, the human body has been so parcelled out to suit the demands of study and practice by specialists and pseudo-specialists that there is probably no room to spare; and the general practitioner is seemingly justified in exclaiming: "Would these specialist neighbors of mine leave me nothing to do?"

I repeat that specialties and specialists have increased remarkably in the last few years, and, planting themselves in large cities, have demanded the exclusive control of such cases of disease as seemed to fall within the limits of their respective branches of practice, and at the same time claiming (often wrongly, I am sure) superior knowledge of such matters.

This rapid growth, the rather loud claims, and the apparent great pecuniary success of specialists, have, naturally enough, roused in the ranks of the profession at large some adverse criticism and opposition. It has become rather fashionable, I suspect, to conveniently ignore the successful diagnosis and practice of specialists, and to pick out and hold up in full view their mistakes and failures. Yet, gentlemen, I appear before you to-night, prepared to maintain that the growth of specialties has been, and is, of the greatest utility to medical science and to the welfare of the public; and, also, that the practice of a specialty is, under certain conditions, perfectly right.

The growth of specialties is justifiable on the ground of its having been a natural and an almost inevitable development.

No ambitious or ingenious physician planned the creation of a special practice, but specialties have slowly risen up in accordance with the demands of the age ; an age of unparalleled accumulation of human knowledge and of wonderful fertility in means for the application of such knowledge to practical uses. In this general proposition are included a number of immediate causes of the growth of specialties, and some of these I purpose briefly to review.

1. Early in this century, a considerable number of physicians in Europe, seem to have realized that a life-time of study would barely be sufficient to enable them to become conversant with the enlarging mass of medical knowledge, and that such an universal knowledge, if attained, would not be thorough enough to fit them for universal practice. Besides, the time consumed and the mental energy employed in this general study, were incompatible with original research and progress.

Probably because of such ideas, together with the prompting of progressive genius, we find that certain members of our profession, without becoming special practitioners, began and carried out special studies, and in several instances these special studies have made their authors immortal.

For example, let me name Lænnec, in what we call physical diagnosis ; Bright and Rayer, in diseases of the kidneys ; Bayle and Esquirol, in so-called mental diseases ; Abercrombie and Ollivier, in diseases of the brain and spinal cord ; Hope and Bouillaud, in affections of the heart ; Cruveilhier, in pathological anatomy ; John Hunter, Bichat, Magendie and Müller in anatomy and physiology.

Each of these great men for years devoted almost all his energy to the cultivation of what then seemed the outlying fields and dark by-ways of the domain of medical science. Had their ambition been, on the contrary, to be walking encyclopedias of medical knowledge, what would we say of them to-day ?

2. It is very probable that the methods of thought and man-

ner of work of medical men in the first third of this century were considerably influenced by the development of specialties in general science.

In previous times a few great men in each century had appeared with a master-knowledge of the whole of the science of their day. Such, for example, were Bacon, Linnæus, Buffon, and, to a certain extent, Swedenborg. The birth of the natural sciences in the troubled times of the latter part of the eighteenth century may be looked upon as a sort of revolt against this assumption of universal wisdom by a few, and the beginning of independent, divergent, special work by the many.

If we take up this movement in the first half of our century we see, as examples, chemists busy for years at different branches of their science; some searching by analysis for elementary bodies, or for alkaloids in plants, others attempting the synthesis of substances, others yet endeavoring to discover chemical products which can be immediately useful in the arts, etc. We note the development of zoology into a great tree of knowledge whose various branches,—comparative anatomy, ornithology, ichthyology, entomology, paleontology and anthropology,—engage the attention, the special attention of innumerable observers. Histology, animal and vegetable, has arisen as a separate science; and so has embryology. In other departments we see men devoting themselves for years or for a lifetime to the study of light, of electricity, of nebulæ and stars, of climate and weather, etc.

To close this enumeration, let us say that the great scientific progress of the last fifty years has been the result, in greater part, of specialized research. And in the same period the men who, having a vast store of knowledge, have attempted to generalize the labors of specialists are exceedingly few. Perhaps I do not exaggerate when I say that Charles Darwin is the only one whose efforts in this direction have been deemed deserving of universal acknowledgment.

How could medical men, medical scientists, in constant intercourse with the promoters of general science, escape the tendency to specialize their studies? How could medicine as a part of

science remain conservative and sluggish in those times of minute observation and analysis, of subdivision of intellectual work, and of hungry original investigation?

3. The unexpected assistance afforded to medical research and practice by the progress of physics and the mechanical arts. No more striking example of an influence of this sort can be adduced than the effect of the introduction of the ophthalmoscope by Helmholtz in 1851. This instrument was not an accidental finding, but a truly scientific discovery resulting from the application of mathematics and physics to the study of the human eye. From this period dates the formal appearance of the first specialty, viz. : ophthalmology, a specialty which has attracted to its study many of the brightest minds of our profession, which has accumulated discoveries upon discoveries, and, partly owing to its being largely founded upon exact sciences, has carried diagnosis to a remarkable degree of accuracy, and brought its various therapeutic measures to a rare degree of perfection.

The study of diseases of the cavities of the body, such as the nose, pharynx, larynx, and the more deeply-placed organs has been greatly advanced by the invention of examining and illuminating apparatus.

The microscope has no doubt facilitated the growth of many a fine-spun and baseless theory, but it has certainly done much to enlarge the domain of science in the direction of physiology, diseases of the skin and kidneys, tumors, etc. At the present time, by its means important researches into the relation between microscopic germs and diseases are being carried on by numerous competent observers.

There are still other reasons, not perhaps scientific, why physicians have been led to limit their practice to certain branches. One is the great amount of time needed to carry out certain procedures of diagnosis and treatment, as for example in ophthalmic practice, in electro-therapeutics, hydrotherapeutics, etc. Again, in the last twenty-five years there has been a marked tendency to attempt the amelioration of chronic and so-called incurable diseases. These praiseworthy efforts need much thought and time,

and can hardly be carried out by the busy general practitioner. Lastly, there is a strong popular demand for the services of specialists. Our patrons understand the advantages of concentrated study and large experience in limited fields of practice. The public seek special advice in the shape of consultations, or even place themselves in the hands of specialists for a time, without any disloyal intention toward their family physician, who is often a personal friend.

Specialties, in study and in practice, have been, I believe, of advantage to medical science.

By limiting their attention to specified branches of medicine, a considerable number of physicians have relieved themselves of the fatiguing cares and complex duties of general practice, and have thus obtained an amount of leisure time for study, and a tranquility of mind favorable to original research.

In this way they have been able to make a critical examination of the writings of other observers in their own and in foreign lands, to make and record minute observations upon the living human being and upon the dead body, to undertake physiological experiments and anatomical researches intended to afford a logical basis for pathological hypotheses, and for an attempt at more rational therapy, and, finally, to accumulate experience in the comparatively rare diseases which general practitioners can only see at long intervals of time.

The results of these special studies, in a variety of departments, are beginning to take shape before us, as an unfinished yet a promising monument.

Each specialty can now point with pride to the numerous discoveries made by its followers; each can show a record of enthusiastic work, of keen discussions, of undoubted progress carried on or made public in its special organization or society.

The literature of each specialty has grown to be immense; embracing systematic works, pamphlets, and periodicals in many languages; and taxing to the utmost the industry of the specialist who means to be well-read in his branch of medicine. In this connection, I might incidentally remark that a knowledge of the

three great living languages is now almost a *sine qua non* of success in special study.

The various specialties have, few will deny, proved useful to the public. I believe that multitudes of suffering human beings have been relieved or cured by specialists in the last thirty years, and that many, if not a majority of these cases would not have been successfully treated by general practitioners, however learned and able they might have been. This proposition could be brilliantly supported from the records of ophthalmology, but every specialty can claim corresponding achievements.

By limiting his range of practice a physician in the course of a few years accumulates a large experience in the diagnosis, prognosis, and therapy of certain diseases, many of which are looked upon as quasi-incurable, and are almost shunned by the general practitioner.

Specialties are further useful to the public because they furnish peculiarly well-qualified consulting physicians and surgeons. The willingness of general practitioners to seek special advice is becoming more and more evident. Even with our awkward rules of consultation, there need not be, I believe, any hostility or friction between the family physician and the specialist. The few unpleasant consultations of which I have been cognizant had been made so by personal faults in the physicians concerned.

I would venture to suggest that, on the one hand, the specialist who is saturated with the belief that he is the embodiment of science in his department, and who believes that the general practitioner cannot and does not know much in the same field, and, on the other hand, the general practitioner who is constitutionally unwilling or unable to have his diagnosis corrected or reversed, or to yield to the greater experience of the consulting physician,—that both these men are equally ill-prepared for the delicate and important duties of consultation.

To these favorable comments I am compelled to add a few words of warning respecting the intellectual dangers which I believe attend special practice.

The first, or more evident risk, is that the specialist shall be-

come a routine practitioner. This is, however, to a certain extent inevitable and justifiable. If, for example, a dermatologist find that a certain ointment is perfectly successful in the treatment of some diseases, who shall blame him if he continue to prescribe the same ointment in similar conditions of the skin? A given form of instrument is found best adapted to relieve a certain deformity or displacement, shall we apply the term routine practitioner, in any opprobrious sense, to the orthopedist who applies this instrument one hundred or more times a year?

By no means. This is a necessary routine, a useful routine, and one which it would be unwise to break through for the sake of sham originality.

But when such routine practice lulls a man asleep to the progress of his art, when it makes him blind and deaf to the improvements of others, when it prevents him from experimenting and trying to find something better, something which shall cure more quickly or with less pain or annoyance, then routine becomes a vice. Perhaps the mental state of the specialist who thus rests upon his oars, good oars though they be, might aptly be called one of partial dementia—a condition in which the past is remembered and over-estimated, the living present is ignored, and the pregnant future unthought of.

A second danger in special practice is the tendency to acquire a belief in the specific potency of drugs, as contradistinguished from their use in accordance with indications furnished by the patient's actual condition. As examples, I may quote the indiscriminate use of quinia in periodical symptoms, or the now fashionable prescription of a bromide for insomnia, or the application of electricity for paralysis. Do we always pause to consider that some remarkably periodical symptoms are not malarial, but of nervous origin; that insomnia is merely a symptom, which may depend upon various pathological conditions, and which is sometimes more quickly relieved by stimulants than by sedatives; or that many cases of paralysis get well spontaneously, or advance fatally, regardless of our electrical apparatus?

Closely attached to specific medication, is the graver fault which

I may term symptom-worship. Naturally enough, the specialist's attention is taken up with the very striking symptom which has caused the patient to consult him ; such as convulsions, headache, eczema, failing sight, aphonia, etc. Some physicians, I fear, at once prescribe a favorite remedy or application in obedience to a half-avowed belief in specific medication. Others give more time to the case, analyze it somewhat, and prescribe intelligently. But how many have the courage to thoroughly investigate the problem, and then base their special practice in the case in hand upon the solid foundation of general medical knowledge ? To do this consumes time, may call for delicate manipulations, and the acquired data must be submitted to a peculiar compound of inductive and deductive reasoning, in order to form a clear conception or hypothesis of the symptoms presented by the patient, as explained by general physiological, pathological and ætiological laws.

Without such an inquiry, how can we hope to construct a rational treatment ?

Allow me to repeat that symptom-worship and specific prescribing must flourish in due proportion to the neglect of general pathology by specialists. This idea is the substance of one of the chief arguments against the usefulness of specialties. It is claimed that the specialist is necessarily one-sided ; that he carries on his researches and his practice in a mole-like way, *i. e.*, working in a furrow and ignoring its relations to the general system of medicine. I think that such a charge is unjust when applied in a general way ; and I believe that, as years go on, fewer and fewer specialists will render themselves open to this serious accusation.

Having discussed the origin, utility, and dangers of specialties in medicine, there remain some practical deductions or advice to be addressed to you personally.

You will recollect that at the opening of my address I said that one of the important questions which agitate the minds of students and young graduates in medicine is, whether to become specialists or not.

Now, this question, like one or two others equally personal which will occupy your thoughts, I earnestly beg you not to be in any haste to decide. Pray do not, as the phrase unfortunately is, "take up a specialty," for it seems to me that few things can be more unfortunate than that a young man, whether student or graduate, should label himself a specialist in his own mind or in the world's eye.

On the contrary, let your aim for several years be to cultivate your profession in a general way with all the industry and the time which a providential lack of private patients will leave you. This, I need hardly explain, is to be done by systematic reading and study, by hospital experience, and by the general practice of your art. For, even if you are ultimately to become specialists, let me assure you that you cannot be too well grounded in general diagnosis, in general therapeutics, and in anatomical and physiological knowledge.

During these years of preparatory study and work, not by any means unpleasant years to look back to, it may happen that you become greatly interested in some one branch of medicine, that circumstances lead you to see many diseases of a certain class; and that you experience a real desire, an ambitious desire, to cultivate this specialty. Thus, and then, if surrounding social conditions are favorable, if your medical friends consider that you are wise in your choice, a career as a specialist is open to you. This is what I would call a physician's natural growth into specialism.

In contradistinction to the above rational process of first securing a thorough post-graduate medical education, and then carefully following one's intellectual bias in the choice of a special study or practice, I would hold up to you as a warning the course of those who, soon after graduating, with or without residence in a hospital, say to themselves, let us be specialists—oculists, dermatologists, gynecologists, or what not. A certain fashion seems to determine which of the specialties is to be "taken up" by these hasty wooers. Some years ago ophthalmology was the proper thing, later still neurology was sought after, now I suspect

(one can't be quite sure of contemporary movements) that gynecology is popular. I believe that such a course is a great evil for those who adopt it, for the unfortunate patients who fall in the hands of these pseudo-specialists, and finally harmful for the scientific reputation of other men who properly cultivate the special fields of medicine.

I have heard it whispered, pretty loud too, that some young men proclaim themselves specialists or "take up a specialty" under the delusion that a special practice is easy and very remunerative. Now, I am not disposed to deny that some few specialists are in the end handsomely rewarded, but who, save these favored few, realize what patient waiting, and what long-continued labor are implied by this success? Then, how many would-be specialists toil and wait, yet never come to be recognized as such by their *confrères* and by the public? There must be a mingling of remorse with great disappointment after having thus spent years in an artificial attempt to be a specialist without reward.

Yet, I do not wish to be understood as maintaining that the honest and well-prepared student of a specialty *must* succeed. No, gentlemen, there is no Sunday-school good-boy doctrine in such real life questions. The artificial, ill-grounded, relatively ignorant special practitioner may make money and even attain a certain distinction, while his neighbor, who has carefully and conscientiously worked his way along so as to be looked upon with respect by his associates and even quoted as an authority, may fall short of success. This is because there enters into the problem of success in the practice of medicine a personal or social element of great importance, and which studious, original, and independent men are very apt to ignore. The successful physician is nearly always something more than learned; he is personally agreeable to his patients.

Finally, in considering whether you are to be specialists or not, I would have you bear in mind the normal organization of the great professional body which you join on graduating.

The immense majority of our brethren are settled in the country, in small villages and small cities, and they of necessity must be

general practitioners. All honor to these men, forty thousand of them I presume, who labor day and night, to the best of their ability and knowledge, for the relief of their neighbors' ailments. We can see them, with the help of our imagination, floundering through snow storms in the North, plodding along on horseback in the scorching sun-heat of the South, venturing into malarious regions, treating and even nursing contagious diseases, missing their meals—in fact, often shortening their lives to prescribe for the sick at rates of remuneration which we in New York consider ridiculously small. What matter if these men do not know all the fine points in medical science, if they have never heard of the depressor nerve, or do not know the name of the laryngeal muscles, or if they cannot establish the minute distinctions between various spinal paralyses? What if several times in their lives of usefulness, placed face to face with an unique or a complicated case, without the help of special counsel, they do too little or even do wrong? Will any one regret it more than they? and again, who, even in the elect circles of medical centres, does not also fail sometimes?

This great mass of the profession in the country and in cities, of which the majority of you must ultimately form a part, I greatly respect, all the more because I am the grandson of a physician who, for more than sixty years, was a useful and respected general practitioner in town and country.

Evidently, only a few physicians can, in obedience to the law of supply and demand, be specialists; and these few are found grouped according to certain geographical circumstances. No one would venture to attempt special practice in a village or in a large town. Even in cities of from fifty to one hundred thousand souls there is barely a living for one specialist in each department. Usually, special cases in such thinly-populated regions are treated by one whom I may call, with no intended disrespect, the quasi-specialist. He is a general practitioner who has devoted time and pains to acquiring special knowledge and skill in the treatment of certain diseases. Other physicians are glad to send special practice to such a medical man if he be well qualified and honest in his professional relations; yet there may not be enough of such

work to warrant his relinquishing general practice. Even in large cities there are many excellent physicians who might likewise be classed as quasi-specialists, yet I cannot but suspect that their special practice is dwindling as the public acquire more liking for strictly special advice and care.

There is, besides, a rather unclassified sort of physician in large cities, who is, to parody Molière, a specialist *malgré lui* ; or if you prefer it, a specialist *nolens volens*. This highly respectable gentleman usually expresses contempt for specialists ; he looks upon them as narrow-minded, half-blind men working in a rut. He himself is widely read in medical lore, he may be a sort of walking encyclopedia, and he has practised in all ways. Yet, fortunately for the public, though perhaps unfortunately for his grand ideal, this physician is known to his colleagues by his systematic work on this, or his lectures on that, or his monographs on various topics, etc. He is *de facto* a specialist ; his *confrères* and people generally know that his opinion is particularly valuable in certain affections, and his consultation practice is colored accordingly. If he be a professor or a writer, his lectures and books reveal what really is in him in spite of a show of universal wisdom ; and the bulk of what he writes is commonplace alongside of that part which treats of the topics he has unconsciously specialized.

Lastly, in all large cities there are the pure or strict specialists, that is, physicians who decline all practice outside of their specialty. I greatly hope to see this small class somewhat enlarged, mainly for the reason that we would then have a larger number of well-qualified observers with leisure to work, and thus a marked impetus would be given to original medical research in this country.

In this address I have endeavored to show that the growth of specialties has been normal, and in accord with the general scientific movement of the age ; that specialties are useful to the public and to medical science ; and that the practice of a specialty is not unattended by intellectual dangers.

I have neither urged you to become specialists nor advised you

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to shun and condemn specialties ; but have tried to make plain and forcible my notions, that the decision to become a specialist should be reached deliberately, upon a careful estimate of the tendencies and capabilities of your minds ; and that your special studies and practice should rest upon a broad and solid medical culture.

Very few of you can expect to become strict specialists, and the career of all the rest as quasi-specialists and general practitioners will be equally useful, equally desirable socially, and equally honorable.



ARCHIVES OF MEDICINE FOR 1881,

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