Address.**THE CLINICIAN, THE HOSPITAL AND THE MEDICAL SCHOOL.***

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So much has been said in this country in recent years regarding the subject that I was asked to speak on that I fear that much of what I shall say will seem very obvious and unnecessary, especially in a community in which high standards are already accepted. But if a clear view is to be obtained of the subject as it affects the country as a whole, many obvious things must be considered, together with some that are less so, for while the importance of the subject is easy to see, the fundamental reasons for its agitation are not so readily comprehended.

There are many persons who feel that the whole clinical situation in a medical school is met by owning or having close affiliation with a hospital or several hospitals, provided the latter be large enough. This does furnish the foundation for a good clinical school, but it may be so unsafely made as to endanger the whole structure, and it needs also much more on top of it if it is to be of real value. This especial foundation needs the strength that comes from a smooth and efficient plan of co-operation between the officers of the medical school and those who administer the hospitals. This is extraordinarily easy to secure if, whether they quite comprehend each other or not, they recognize in each other but one purpose — the present and future welfare of the public; and no less important, if each sets aside certain duties as distinctly his own and others that are quite as clearly the other party's. The difficulties that have interfered with proper relations between medical schools and hospitals have been due more largely to misunderstandings than to anything else. The method that usually gives best results in any undertaking is to work out clearly the duties of any person in the system and then to let him do his work freely and undisturbed so long as he does it well. Methods of managing hospitals and the arrangements with their staffs have varied so greatly in different institutions, and have often been so complex, as to be little comprehended by administrators or staff, so that friction readily develops. The tendency has often been towards making constantly increasing restrictions, in the endeavor to systematize matters and avoid further difficulties. As is nearly always the case in any relations between persons of good purposes, the contrary method, in the instances where it has been used, has been the most successful and productive of the greatest loyalty. This is the simplest method, namely, to turn over all things administrative to the administration and all things medical to the medical men and to hold each completely responsible for proper conduct of his work, but leaving the details to them entirely, for the good reason that they are chosen because of their fitness to carry out these details. If any other system than this is followed there is great

danger that enlarging or otherwise improving its hospital facilities will be of little benefit to any medical school or to the hospitals and of no service at all in establishing permanently warm and smooth relations.

But there is an even more important matter that must be met by the medical schools and the profession if the new conditions sought for so actively are to be actually successful. New and wider responsibilities not only give greater freedom of action; they also, because they are new and wider, necessitate giving more time and thought to them, and, more than anything else, they require wider training. Great usefulness as a teacher may go together with great skill as a practitioner, but one does not imply the other, and when either of these activities is made more exacting, the other must be restricted both in order to give proper thought to one's work and especially in order to keep trained for the work, for if training stops, progress halts also, of course. While the life of the teacher and investigator usually increases his value as an adviser in difficult and involved problems, it often decreases his skill in carrying out the home details of family practice, because it takes his time and thoughts away from these; and devotion to practice makes a man similarly unfit for exacting teaching and investigative work. In the past, when the demands upon a teacher were relatively slight, the career of the teacher could be combined with that of the practitioner with efficiency. Now the standards as to what should be accomplished in clinical departments as well as the demands upon individual clinical teachers have so largely advanced that it has become clear that the academic clinical career can no longer be successfully followed unless it is looked upon as a distinctive career, not as an agreeable adjunct to a career in general practice. What we need, then, quite as much as better hospital facilities, is an advanced system of developing men after their undergraduate days so that they may be fully equipped to care for these larger opportunities and greater responsibilities. This need is not less than the need of large hospital services generously equipped for teaching and research and freely used for these purposes, and there is too common a feeling, even in many places of high standards, that if the principals in the cast are all stars the success of the play is assured. The weight that any organization carries is quite as largely dependent upon careful choice and training of junior men as upon the ability and force of the seniors. Strong men in the high positions will draw able juniors, but only if conditions are made such that the latter can readily develop further. It is in the first five or ten years of their work that the young men are in greatest uncertainty and most in need of both help and guidance. After that they usually get along if they have it in them to do so.

Professor von Müller, in his recent memorandum to the Royal Commission on Education in London, closed with the significant statement that no plan of education will be successful that does not carefully consider the future. A year ago he

* Read at the midwinter meeting of the Æsculapian Club of Boston, on Jan. 20, 1912.

made a remark to me that is equally significant and is a corollary to what I have just quoted. He said that the success of his clinic would be impossible without finely trained assistants, and that to hold such assistants as he has for even the briefest time, it is first of all necessary to devote more time and attention to one's department than the assistants do, and to consider the training of both students and assistants a most serious responsibility, and it is equally important to have and to maintain superiority to them in general breadth and thoroughness of training, so that they may get what they want quite as much as opportunity to work, namely, sound and reliable advice in their problems.

We often hear the comment that remarkable improvement has taken place in this country in the last generation in the purely scientific branches of medicine, while the clinical branches have shown relatively little improvement except in providing increased practical instruction to students. Some persons, indeed, insist that actually fewer great clinicians are being produced now than a generation ago. Whether the latter statement is true or not is very hard to determine, but we may say, I think, that in recent years there have been fewer men in the clinical branches in this country than in the non-clinical who have acquired distinction of a degree that makes them known not only beyond their own locality, but also by others than those who are interested in the same line of work, and this is an exceedingly important matter, for the character and quality of the men who are leaders as teachers and thinkers in any subject largely determine the quality of oncoming workers in that subject. I think we may be very optimistic with regard to the immediate future of the medical sciences in America, and if the same pace in advancing be kept in the coming quarter century as has held in that just past, we may feel well satisfied. There is good reason to believe that this will be the case. Whether the clinical branches will take their proper share in this prospective advance is more open to question. Their history in the past decade or two has not been so clearly encouraging. We have had decided improvements in the extent and character of the education demanded of those who enter upon the study of medicine. There have been a few very important advances in the methods of teaching the clinical branches, especially the greatly increased practical work with patients, and these are spreading in many places as rapidly as circumstances permit. Further, there have been periods when, most important of all, there have been indications that, proportionately to the number required, quite as many men of forceful and highly trained minds were tending to go with deep interest into clinical teaching as into purely scientific departments or into practice. The immediate present, I am fain to believe, is one of those hopeful periods. But they have been periods only, and the stream of strong new blood has been fitful, far less steady, than in the non-clinical branches and much more largely arising in a very few institutions.

The reasons for this are in part perfectly open to those who have studied the matter, but in part many persons appear to see only the superficial and more material reasons. The explanation ordinarily given, and a very important one, is that the rapid progress of the purely scientific branches has been due to their having been put upon a definitely academic basis. As a consequence those who have gone into them have given up any form of outside work in return for the dignity of position and extensive facilities provided them, and thus sufficient time has been available to them for the constant study, reflection and research that are essential in making great teachers and great leaders. Clinicians, on the other hand, who are in practice necessarily make their practice their first interest if they secure it, or hold it when they have secured it, and their teaching and research must suffer since they take a secondary place in their lives and thoughts; and when great success in practice comes they are pushed more or less completely aside by the pressure of the more absorbing activity. This, it is said, is the usual history of clinical teachers in this country. There are happily marked exceptions, and there are many degrees of the change, but we know that it is very often true, and a large proportion of promising young clinicians after, say, ten or fifteen years of prominent activity cease to take a very conspicuous part in the progressive affairs of their profession. Regrettable as it is, it is undeniable, but there is too much tendency to look upon this as due to mere human frailty and a desire for the indulgences that increasing income brings. This is the reason with many, no doubt, but men do not, I think, become clinicians as a rule because they are more selfish and self-indulgent than those who are not clinicians. A commoner and more telling reason with them is, I believe, a recognition of limitations in themselves that are not dependent upon any lack of native ability nor upon things that they can very well control themselves. Academically, the clinician has been a good deal of a foundling, and, like the infant waif, if you simply put him into a hospital, no matter how fine it is, he will not usually thrive as well in growth or ideals as under a foster parent who introduces some mothering into his care. The life of the clinical teacher is and always will be more difficult than that of his academic colleagues because necessarily more complex, for under any circumstances he must have equal academic responsibilities, the personnel of his department must always be more elaborate, and also he must carry the very serious responsibility of the lives and health of the hospital patients under his care. Further than this, entirely aside from the financial aspects of the matter, it is certainly highly questionable whether he can ever, without greatly endangering his usefulness, relinquish, as is being suggested, the added responsibility and complexity that comes with outside consulting work. Since, then, he must lead a complex life, he needs an especially clearly marked pathway to follow if he is to make progress equal to that of his fellows.

Almost all medical schools, however, have done practically nothing systematic to provide for the training or the careers of their future clinical teachers and investigators, no matter what they have done for those who are at any time in the chief positions. Usually the schools have simply chosen the most available man when a position was open, and have done the same thing again next time. Meanwhile the men developed as well as they could, but, as a rule, almost entirely on their own resources, intellectual as well as material. This has not for many years been true of the non-clinical departments. The men in them have from the beginning had a definitely recognized course to follow and definite recompense in the way of increasing dignity and freedom in teaching and research and greatly enlarged equipment. Their salaries have usually been much too small, especially in their earlier years, but they have at least sufficed for them to live upon in a narrow way. Most important of all, in good departments the young men are immediately in contact with and directly under the influence and guidance of a chief who is trained well beyond them. It is wise that improvement of the conditions should have been provided in the fundamental branches before the clinical, but it is necessary to recognize the great difference that has, in recent years especially, existed in the two lines of work. In clinical departments I have often known the head to be very uncertain of even the names of some of the junior assistants, and very commonly he sees them only upon very rare and special occasions. This is usually less through his own personal fault than that of the general system. Appointments from the bottom to the top positions, quite as frequently as not, are made for other reasons than demonstrated fitness. This course is in most places forced upon the school by the fact that influence of the applicants in hospitals, access to which is necessary, must be considered as much as the relative merits of the men. But it has been so much an established custom that other things than fitness are very commonly important factors even in institutions where hospital facilities are controlled. Furthermore, the young man is nearly always on so small a salary, if any, that he must spend by far the major part of his time making his living outside. He gets some training in advanced medicine if he has the exceptional vigor, mentality and industry that are needed to overcome these difficulties, but it is necessary that some or all these qualities be present in unusual degree if he acquires training enough not only to carry him through to a position of distinction, but also to give him the breadth and soundness that are required if he is to be a leader not of students alone, but of future leaders. Internal medicine, for instance, has gone well beyond the point where it required of the leaders in the subject only a knowledge of pathological anatomy and the clinical phenomena of disease, together with keenly trained powers of observation. It now demands also continually increasing knowledge of experimental as well as descriptive physiology,

pathology and pharmacology, both chemical and physical, and not merely a collegiate acquaintance with but a working intimacy with the fundamental sciences on which these are based. Besides having a good knowledge of all these subjects, a man to be a leader must be a scientific as well as a practical expert in one or more of them. Similar things are true of the other great branches. The hard-won but necessarily unsystematic training of the ambitious clinician suffices for a sprint, but often not for a long run for his life, and he frequently sees this as his career progresses and makes deliberate choice of another form of activity in which he knows he can excel.

Clearly the system is wrong, and equally clearly the way leading to the solution of it seems to lie open to us, namely, to put the clinical departments on a basis similar to that of the non-clinical, but with certain requisite modifications. To do this it is necessary that the young clinician going into advanced work be offered a career that is safe and is sufficiently full of promise and stimulus to attract him. In the first place, it is necessary, as it is in all successfully managed undertakings, that medical schools get regularly the best men that can be secured, not only seniors, but also juniors, wherever they come from. The value of this to the undertaking is self-evident. Its importance to the men lies in the breadth of opportunity it gives them, in that it assures them that the best is obtainable by them wherever they originate, and it particularly frees a man of the danger of staking his whole career on the one or perhaps two local chief positions, neither of which may ever come to him, or if one does come, it may be when his career is already fading. This important provision we may, from present indications, pretty confidently expect to be soon a somewhat general custom in this country if the necessary hospitals co-operate. It will not be practicable or wise to draw all the junior men from outside, of course. Necessarily a large proportion of them will develop locally. But they should in any case be chosen as carefully as the chiefs, so far as circumstances permit.

Secondly, the departmental head should have and should be expected to exercise the power to make appointments, and to arrange the work of individuals in the department in the way that will be most effective, giving due regard to the standing that individuals have earned rather than to the extent of their routine service. The department with only a nominal head, with many heads or with a head who must constantly consider personal influence in hospitals or other matters is almost certain, in any form of work, to be inefficient and cannot secure the best efforts of the best sort of men. This point can be met only by giving the schools a direct voice in choosing the chiefs and also the junior men in any hospitals that are a working part of any department, as well as in the school, and after choosing a head for any department the authorities must go to him for judgment as to other men in his department just as is done in other departments of educational as well as other sorts of work. The head must

also have a sufficient number of hospital beds under his entire control to free him of the necessity of introducing politics into his department and compromising in his purposes through fear of losing facilities in less closely associated hospitals that would otherwise be necessary. In the hospital wards he should really be the head in all matters that do not directly involve questions of general hospital administration and do not overstep necessary limitations of expense. Any interference with his orders as to admission and discharge of patients, methods of nursing and treatment, methods of teaching and research or anything else relating to the medical conduct of his division, imperils the success of his care of the patients, interferes with his building up any real organization and ruins his whole scheme of teaching and research. He must, of course, be chosen carefully, but when once chosen must be allowed to exercise the ability and training in his work that led to his being chosen.

In regard to both teaching and research I would say one thing further, however, chiefly because I have sometimes heard the view expressed that since patients are most commonly paying little or nothing for the care they get they should be required to conform to the dictates of the staff as to teaching and investigations so long as no harm can come to them thereby. This is certainly a very unusual and very wrong view. It is beyond argument that nothing that is likely to harm a patient, whatever its nature, should be undertaken, but it is, I am sure, equally clear to most minds that even if it can do him no harm, anything that annoys a patient should be considered quite as contrary to the spirit of hospital practice as to that of private practice. If he is unreasonable in ways that are damaging to other patients, he may properly be discharged from the hospital, but he cannot properly be made to submit to perfectly harmless teaching if he objects, any more than he can be made to submit to very valuable treatment if he refuses to do so. If, however, he is given consideration and a free choice in the matter, objection to teaching is vastly less common than resentment for being passed by. The touch of vanity that is in us all and that makes us a bit jealous of the greater interest of even the ill of others, is as commonly seen in hospital wards as outside, and, more important than this, the patients are very often brightened and interested by having the monotony of illness broken by discussion of their cases. These things, together with their very general desire to further the wishes of a kindly attendant, make objections on their part a point that never really hampers a teacher.

The two important things, therefore, that any co-operating hospitals are asked to do are (1) to give their chiefs of staff liberty to carry out their work in the way that their professional training indicates is best, and to impose upon them rather than upon the administration the responsibility for the medical details. If trusted men are chosen, there would seem to be no reason to oppose this except tradition. Instances may be quoted

against it, to be sure, showing that medical men have not always fulfilled expectations when even customary methods have been followed, but these are not sufficiently common to provide a general argument, and when they have occurred they have more frequently than not been due to the fact that with so many restrictions the responsibilities imposed become so slight as compared with duties of other kinds that they soon lose much of the weight they had. The most secure way of meeting this is to give more, but at the same time to demand more. Second, they are asked to appoint to their staffs only men who will be acceptable to the medical schools. This seems to many to mean that the hospital will give up entirely the power of appointment of their own men. On the contrary, it will mean that they will combine with the medical schools in offering inducements that will secure for both, not only in the present, but in the future, more highly trained men and more of their time and interest. The exact way in which the appointments are determined upon is less important than the standards by which a determination is reached. The essential standards are that each man shall be of a high order of practical ability and training to be suitable for either an important hospital position or an important teaching position, and, further, he must be of equally high academic training and ability to be suited for his medical school work. If university authorities were intimately familiar with hospital affairs, or hospital authorities with the intricacies of university problems, either might safely have full power of appointment. Since this is not and cannot be usually the case, some combined method must be adopted, and since the university problems are clearly the more complex and difficult, the most evident method is for the university authorities to nominate the men who would be acceptable to them, while the hospital authorities retain the power of final appointment. If both make every effort to determine who, in the whole field, are the men of highest merit, not simply in the popular view, but in the eyes of the most capable men of their own profession, there will be little difference of opinion in the two bodies.

As to provision for the material needs of the chief and his assistants: He will require a salary sufficient to permit him to restrict his practice absolutely to consulting work, and to make this secondary, in both time and thought required for it, to his academic work. Further restrictions are being planned by some persons. Their usefulness and safety are, I believe, very questionable at present. Whether in isolated instances they are carried out or not, I think what I have mentioned is necessary in any good school. Provision should, whenever the situation of the hospital and other circumstances render it at all feasible, be made for the clinicians to conduct all their ambulatory consultations in the hospital in order that the chiefs especially may spend most of the day in touch with their main work and their assistants. Both medical school and hospital will profit very greatly by their being constantly in control, not

merely during ward visits and teaching, but throughout the day. The assistants should have sufficient salary to pay necessary expenses so as to free them from the need of general practice, and they should live in the hospital for several of their earlier years as assistants, so as to be constantly in touch with emergencies and so as to get the details of experience that night as well as day contact gives, and particularly in order that they may be well bathed in the atmosphere of study and observation.

There is no longer the same need that there was a few years ago to add the statement that laboratory facilities sufficient for the chief and a considerable staff of assistants must be provided. It is, however, necessary to have it clearly understood that a laboratory for students must be a physical part of the hospital, not in a widely separated building. Any one with experience knows that the practical value of laboratory teaching in clinical work and the feasibility of carrying it out lessen in direct proportion to its separation from the living patient. Instead of one large students' laboratory there may equally well or perhaps better be small laboratories for them off each ward or pair of wards equipped for the usual clinical methods. The laboratory for the teaching staff must either be rather expensively and diversely equipped, as the studies carried on in it will be of varied character, or there must be co-operation between the clinical and the non-clinical departments in this matter. If the latter are immediately adjacent to the hospital, the last-mentioned plan will often be preferable, as it is much more economical and accomplishes more in that a large degree of added scientific training can be automatically secured by the clinical staff from the immediate contact with those who are in the medical sciences, and it leads the non-clinical departments to appreciate more sharply the bearing of their work upon clinical matters. In any case each clinical department will need a generous laboratory budget. The equipment and budget must come in large part from the medical school, but in all fairness a good share of it should come from the hospital, as the research activities of the laboratory benefit the hospital and its patients quite as much as the school, and an elaborately equipped laboratory is recognized as an absolute essential at present in the mere routine care of patients. The manner in which budgets are provided may wisely, however, be arranged differently in different circumstances. Certainly the school should always pay all cost of laboratory teaching and also contribute to research in any hospital with which it is closely affiliated in order to accomplish the purpose I am dwelling upon to train men suitable to advance the schools and the hospitals in the future and to advance medicine. The importance of research is a point that must be faced squarely. Aside from the fact that in the broad sense of the word research alone advances any subject, it is especially important that clinicians be trained into the judicial and inquiring spirit, and especially into the critical spirit that a little experience in research gives, for no one is

more constantly an investigator than any thoughtful practicing physician and no one has more important or more complex problems to solve, and his mind must be trained to meet these. By training in research I do not mean simply training in discovering new things. Valuable as these results of research are, there is a more essential influence upon the clinician as an individual. His work is such that he must frequently act empirically and I think all thoughtful clinicians will agree with me that his greatest struggle is in avoiding the danger of falling into the habit of deciding all things upon an empirical basis. While a hypercritical attitude makes a man ineffective, there is nothing more dangerous perhaps in practical medicine than an uncritical attitude, and it is by decreasing the proportion of the empirical in our methods that we advance. It is the training that it gives him in recognizing errors and in reaching sound and critical judgments rather than the things that he may discover that explains the fact that experience in really thorough research of some sort has nearly always been an important element in the careers of those clinicians who attain high position in either practice or teaching; and in the latter, whether it be by old or new methods, it is training in the critical consideration of problems — which is only another way of saying research — rather than brilliant powers of exhibiting knowledge that determines its value.

What is to happen to the best type of practitioner under this scheme? Is he to lose the stimulus of teaching and is the student to lose instruction from him in the details of the conduct of the medical life? I imagine no one thinks of eliminating him or of lessening his dignity. It will always be necessary for medical schools to have a relatively large clinical staff. It would be impossible even if desirable to have this staff composed entirely of men whose chief aim is an academic one. It will be as necessary as wise to have a group of men whose chief aim is practice. It will mean simply that the work will be so arranged as to give these men opportunity to develop more clearly than has been possible with less well-defined methods the side of medicine in which they are most skilled. The plan conceived of would eliminate them from the headships of departments, but it is inevitable in any feasible scheme that headships be held by men who will give more time than any man who chooses the career of the practitioner would be willing or able to give. It will, I think, make the position of these men more attractive and comfortable to have certain major duties assigned to them, rather than to have more expected of them than they can perform, as has been the case in the past, and it hurts no one to become part of a system, especially as it will necessarily fall to them to develop as highly as possible and to systematize, in a way that has been too little done, the teaching of actual practice.

I have spoken somewhat as if this whole scheme were new and even hypothetical. This is, of course, not true. In most of its important details it has been the basic idea in one school in this country for twenty years, and through methods

that have as closely resembled these outlined as local circumstances would permit most of the promising men of the present day have developed, though many of them have done it almost entirely through their own initiative. I have approached it in a hypothetical manner because it is easier to look at a thing judicially when it is considered as an hypothesis than when it is something to be done or not done as immediately as possible.

There are a few who while recognizing it as the tendency of the age doubt its wisdom, chiefly because of a fear that it will not produce as practical results. This is usually the objection of highly conservative persons. The first reply is that the old established methods have not produced good enough results, or there would not be the general desire that there is for changes of some sort. And we are not confined to one or two institutions as examples of its success. We can also use nations as examples. If the contributions of Great Britain, France and the German-speaking nations to medical progress in the past two or three decades be very briefly compared, I think every one would agree with the statement that while all these countries have produced a large number of important additions to knowledge and some conspicuously brilliant men, in Great Britain certain non-clinical branches have furnished very much more largely than clinical branches both men and knowledge of permanent importance, while in France there is not so clear a distinction between clinical and non-clinical progress; but from neither country has there come anything like the large and continuous flow, which, considered in bulk, makes an enormous amount of new information, both practical and theoretical, that the German-speaking nations have furnished. The clinical departments have constantly taken their full share in this work. The best criterion of the usefulness of a system of education is its influence, not upon the mental and physical dexterity of those educated, but upon their ability to accomplish lasting results. In this sense Germany may fairly be said to have educated the world more largely than any other country, in medicine at any rate. And, contrary to the impressions of many people, this is, if anything, more true in the clinical branches than in the non-clinical. What are the main differences in system in these countries in the clinical branches? First, in Great Britain there is no distinctive career for the clinician except as a practitioner. As has been the case in this country until recently, his career as a teacher has been looked upon almost always as a stimulating adjunct to his career as a practitioner, and largely as a feeder to the latter. He has had no facilities for research in most places, and no extensive facilities anywhere. He has been almost completely barred from the thought even, that special accomplishments on his part might lead to his being given charge of the department in another school, calling a man from one school to an important post in another in the same town being an extraordinary rarity, while in the very unusual instances

in which highly accomplished men have been called from one town to another, it has nearly always been impossible to give them adequate facilities for work, even an adequate number of hospital beds, and customs have been so strongly against such calls that the members of the profession have themselves often opposed them in a most bitter personal way. Of those prominent clinicians who testified recently before the Royal Commission on Education in London only one thought that medical schools could, if they would, go outside their own staffs to secure men of striking ability. The one pronounced way in which clinical conditions are in advance of our own is that the clinician in his own wards is in complete authority. The hospital administrators not only make no attempt to interfere with him in the general methods or the details of his management of his wards; it does not even occur to them to do so when his work is being well done. He can teach as he wishes, and he runs his division in general as he sees fit, and this is looked upon as the only natural and satisfactory way of conducting the work. This is the reason that so excellent a method of instruction as the ward clerk system has been possible. In this more than is done anywhere else in the world the students get practical experience in its most highly developed form—serving for many months as an actual part of the working personnel of well-conducted hospital wards, doing their work in the freest possible way, but of course under the supervision of experienced men. I may say that throughout Europe, in all countries that take a prominent part in medicine, this freedom of action of the clinician in regard to teaching and otherwise conducting his wards in the way that gives him the best results has so generally demonstrated its naturalness and value that in all good hospitals any other method is not thought of, and would not be accepted by either the management or the staff. This is true not only of hospitals in which the main part of the teaching is done, but also even of those in which none is done. If the man in charge has or acquires from the medical school a position as a teacher, any hospital facilities he has are always freely and automatically available. Whether a teacher or not, he is always free in all other medical ways in his own division. These conditions indeed include pathologists as well as clinicians. It is very impressive to one interested in this subject to hear repeatedly of various inducements, even financial, being offered by hospitals abroad in order to secure teaching because of their realization that this immediately causes improvement in their staffs, from the internes up to the chiefs, and the whole status of the hospital advances. The attitude of the hospitals in Great Britain towards teaching may perhaps be illuminated by mentioning the fact that owing to its having recently acquired new facilities, a prominent university school recently reduced the amount of clinical teaching in the hospital where it had been previously carried on, in order to make good use of the new. The older hospital immediately asked the medical school to

compensate it for the loss of prestige that this involved. The reply of the medical school was both satisfactory to the hospital and interesting evidence of the enlightenment that recent years have brought. They built the hospital a clinical and research laboratory.

Nominally some medical schools have the power to call whom they will to their chairs and to give them hospital services. This is really almost a dead letter, however, as I have said. The profession opposes it, often bitterly, and medical school and hospital authorities have similar prejudices or shrink from doing violence to traditions. As to the wherewithal to live, clinicians are expected to get this either entirely or almost entirely from their own pockets or through practice.

In France conditions are in a sense even more narrow. The clinician has absolute power in his wards. He has, I think, somewhat better facilities for research, and there is more of dignity and academic atmosphere in the public attitude towards him at least. But any wide development of the non-clinical as well as the clinical branches has been interfered with by the fact that there has been no tendency until very recently even to experiment with filling the chairs with the best men. It has been a strictly closed system. A man becomes *externe*, then *interne*, then *agregé* and then professor, where he begins if at all. He must go through all stages and he need have no dreams of wider or more congenial pastures than those he is in, and he has only a very limited number of local chairs as goals. It is difficult to comprehend the depth of the feeling against calling an outsider. In addition to this, the clinical chairs have been in large part in the hands of clinicians who do not devote themselves wholly to the work. I think these points indicate why France has been less influential than Germany and why her non-clinicians have not been very clearly better than her clinicians.

It is worth noting in regard to the non-clinical branches in Great Britain that in those that have most prospered, the academic system has prevailed, while in those that have shown little progress the teachers have been in considerable part clinicians whose interest in their work was largely in using it as a stepping stone to the more desired clinical positions. Using any subject chiefly as a means to another end always belittles the subject, of course.

What is the reason that Germany and Austria have been the Mecca of advanced students from other countries for many years, and the source of so much new knowledge? Friedrich von Müller said recently in the memorandum that I have referred to that the essential difference in medicine in Great Britain and America as contrasted with Germany is that in the former countries it has been, like trades, approached from the practical standpoint, while in Germany it has always been approached from the university standpoint. There is much keen wisdom in this remark. There is little doubt that Germany's remarkable prosperity in so great a variety of ways is the fruit of

her having trained her people in all important walks of life in the same thorough system of approaching practical details through the medium of fundamental principles, and her greatest strength lies, I imagine, in this rather than in her army or navy. In no country are the pathways to progress in clinical work made so definite. It is a custom so well established that no one thinks of anything else to call whatever man is best suited to the place wherever he comes from, usually from a distance. Not only do the profession accept this method; they accept the academic clinical life as a perfectly distinct one, and they feel so strongly the propriety, for the dignity and progress of medicine, of providing proper facilities, that they never think of opposing the use of the choicest hospital positions by the medical schools for their teachers. This is not because the power of the state, which conducts the schools, makes it impossible to do otherwise, for the state usually does not control the hospitals. In fact, in some instances where divisions of hospitals are specifically set aside by the local government for the care of the dependent sick, and appointments to these services even carry salaries with them and are intended for the local profession, the local profession stand aside and let some of the positions at least go by tacit agreement to the staff of the university clinic in order to make its facilities sufficient. I once worked in the hospital in Gratz, for example, where there was the *Klinik* and the *Abteilungen*. The latter were such voluntarily released divisions.

A hospital clinic goes as naturally in these countries with a clinical chair as a chemical laboratory with a professorship of chemistry, and has for about a century. Ever since medical education has been a clearly established thing the clinical branches as well as the non-clinical have been quite naturally and without struggle viewed from a definitely university standpoint. Quite as naturally every clinical chair carries its quarters and equipment for research, which are often extremely generous. The head of the department is quite as much in command of all things in his division as is the commanding officer of an army division, and there is no distinction in this or any other regard between his hospital and other facilities. He is not expected to take any part in the general administration of the hospital but he is left absolutely free in all ways in his wards. Indeed, in some places where the hospital is in part used for teaching and in part has a municipal staff, the clinical departments of the medical school often have their authority extended in a way beyond their own wards, for it is arranged that the admitting physicians from the medical school clinics shall take their choice of cases applying for admission. If useful to their clinics, they take the cases; if they do not want them, the other services must take them.

All appointments must come from the head of the clinic and the budget when once determined upon is his to spend as he sees fit. The cost of maintenance of the hospital and patients is outside his province except the maintenance of the

laboratory, which is a generous part of his budget. When, as is most commonly the case, the hospital is not a state hospital but municipal or other, the laboratory budget is in part contributed by the state, in part by the hospital. In the few instances in which the hospital is owned by the state all expenses are, of course, met by the state. Assistants are given quarters in the hospital, proper facilities and a small salary for necessary expenses, and are sure of graded advance in accordance with their work. Most junior assistants after a time go out into practice, where their advanced training becomes a large asset to them. Those with special adaptability for it go on into professorial positions, usually in another, and ordinarily at first in a less conspicuous clinic, and from there, if of high ability, on to the most prized chairs. If a man is valuable but no place as Professor Ordinarius is available, or he is not distinctly of large university caliber, he is still rewarded by the title and dignity of Professor Extraordinarius. Everything is done to make the life a secure and attractive one to those who have a bent for it. The professor gets a moderate-sized salary and in addition a large percentage of the fees of the students who register in his clinic, and this in many places gives the successful teachers a large additional income. There is one point that is not regulated. His conspicuous position makes the head of a clinic liable to being overwhelmed by consulting work. Often conscience or public opinion, or both, cause him to restrict this carefully. Sometimes he does not, but even then the dignity and responsibility of the position usually keep him active in it at any rate.

One criticism frequently made by English and Americans is that the German system does not produce as good doctors. Whether this is true, or whether they are, like other things, more satisfactory to their own people and less so to foreigners, is difficult to determine. If there is any truth in the statement, I believe it is the consequence of the most evident important fault in the system, a fault like most of those in other countries, apparently due again to love of tradition. That is, the undergraduate student gets very little direct practical work with patients. Almost all his clinical teaching consists in listening to clinical lectures in large amphitheaters. Even in places where they are proud of the extent of their practical work, I have been unable to see that it was nearly as extensive or effective as that in Great Britain or in the best schools here, and with their splendid opportunities to make it what they will, I can see nothing but tradition or a lack of attention to what is being done elsewhere that prevents. Even the year spent as so-called "Praktikanten" in hospitals, as far as I have been able to determine, gives them distinctly less real training in practical matters than the English undergraduate student gets.

With a suitable combination of the German academic system and something approaching the English ward clerk system, the best results now possible for both students and medicine would seem to be likely both there and in this or other

countries, and such is the plan that it is being pretty widely sought to establish in this country. It is quite apparent how essential it is that in carrying out this plan there be entire freedom in the academic use of large hospital facilities; that appointments to these hospitals be made by the medical school and hospital authorities together, but on a purely academic basis, and that medical school and hospital work in entire unison, and with the one purpose of contributing all they can to the betterment of things that affect the public perhaps more than anything else. But is it possible to have any such extensive change as this involves in the usual relations with hospitals? Can the struggle for hospital positions be made to halt when it involves the interests of the school, and the interests of medicine in general rather than of individuals be allowed to settle them? Can the fear that teaching will injure or disturb the patients be changed to the feeling that most patients like it and thoroughly appreciate that it largely adds to the care and thought given their cases? Can we especially make it clear that it gives a good deal to hospitals in return for what it asks? That the hospitals of national or international influence and reputation are nearly all teaching and research hospitals, that it is only in this country that this may seem not wholly true, and the reason for that is simply that in this country custom has only begun to give any real opportunity to prove it. The feeling is often expressed that we can get no encouragement in this matter from experience in Germany and Austria because the whole thing there is under the control of the state and all complexities due to varied forms of control of hospitals are thereby avoided. On the contrary, we have practical evidence in the experience of these countries that it can be done here, for it is precisely in regard to the hospitals that the state there usually has no governing power but works through agreements. Some of their hospitals are owned by the state, but much more frequently they are municipal. Some of them are run by insurance societies, some by general philanthropic methods. In all but the first case the educational authorities of the state have no power and they work through affiliations which are directly comparable to what must be largely done here in order to secure the desired results. Indeed, these affiliations are understandings in most cases rather than binding agreements. They can be broken easily and in very rare cases have been ruptured, but only very rarely, because the mutual benefits are too well understood. In Great Britain the hospitals are in chief part, as they are here, philanthropic undertakings. There the relations, as I have said, are almost as close as regards freedom of action as they are in Germany and are recognized to be of great benefit to the hospitals.

What things are of benefit to a hospital? Not primarily things that benefit a medical school or any individuals active in administration or medical work in the hospital or the school, but those things that increase its service to the sick. It is not simply the important fact that these

changes will provide men of higher training for the hospitals from the internes to the chiefs, and will imply that the attendants give more time and thought to their hospital work that recommends them to hospitals. It is not merely that they will increase the usefulness of the individual medical school affected in each instance. It is chiefly that they will change the work of the hospitals from simple ministration to the sick of one period to ministration to the sick of the future as well as the present, through providing advanced training as well as new information for the future. It is a sound principle that philanthropy that seeks not only to relieve suffering but to prevent it is freer and broader than that which is content simply with giving. If we can demonstrate that this plan will conduce to such a result we shall give the best argument, I think, that can be used with hospital authorities. Its safety for the hospitals is shown by the fact that it has for generations been the clearly understood and successful plan in intelligent countries abroad.

There would seem to be little doubt that there will be increasingly rapid progress in this matter in this country. The fears natural to the early discussion of such free relations have quieted, and within a very few years we have seen a series of conspicuous hospitals here, in St. Louis, New York, Cleveland and elsewhere, enter into plans much like those I have outlined. We may even see the counterpart of experiences such as the British one I mentioned — that hospitals will consider it an affront to have their medical school relations restricted. In those places where progress has already begun, the prospect of further progress is brightest, for the greater the proximity, the more evident the contrast between the more and the less efficient. As to the attitude of the profession, I think we need have few doubts on this point in places where the movement is in trusted hands. The loyal feeling of support among the good men here and in the other cities I have referred to shows sufficiently that as a rule the profession is at least no less willing than human kind in general to promote public interests rather than personal.

Original Articles.

CONTRIBUTIONS TO THE NEUROLOGY OF THE CHILD. I. CONVULSIVE TENDENCIES DURING AND AFTER ENCEPHALITIS IN CHILDREN.

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THERE is an unnecessary gap in our knowledge of nervous diseases in children, due to the lack of co-operation in the recording of data between the hospitals for acute disease in children and the institutions for chronic conditions. On *a priori* grounds it seemed to the writers that there might be a relation between acute disease of the nervous system and subsequently developing epilepsy or

feeble-mindedness, a relation obscured by lack of inquiry into subsequent histories on the part of the children's hospitals and by lack of knowledge in the institutions for chronic and defective conditions concerning the medical data on file in the children's hospitals.

In particular, despite the silence of books on epilepsy concerning encephalitis as a basis for persistent convulsive tendencies, there seemed *a priori* reason to suspect such a relation. In the first place, it is highly probable that *certain epilepsies acquired by adults are grounded in encephalitis*. A case published by one of the writers in another connection in 1908¹ will perhaps bear repetition in abstract:

Case of acquired epilepsy in a fisherman of sixty-eight years, fatal in nine weeks: Focal acute encephalitis of right cornu ammonis.

The patient, a fisherman, born in 1836, had a number of insane but, so far as could be learned, no epileptic relatives. Scarlet fever in childhood had left him slightly deaf. There were two accidents with unconsciousness, one a fall from mast-head at fifty-four or fifty-five years with unconsciousness three or four hours; the other at sixty-five, unconsciousness from vapor on a launch. A gradual decay of faculties began at sixty-six years: failure of memory, depressive ideas, train of thought limited to fishing, attacks of trembling without unconsciousness, irritableness. At sixty-eight years, nine weeks before death, the patient began to have fits which were at first severe but infrequent (three, once with a slight shock, in the first three weeks), then grew less frequent, but remained severe, and ended by four days of practically continuous convulsions with unconsciousness (over four hundred attacks). The convulsions were general, clonic, with head and eyes turned to left, right arm flexed over abdomen, thumb drawn under fingers, left hand extended by side. At times there were tonic convulsions.

The autopsy (four hours after death) showed the following conditions:

Intracranial congestion. *Focal encephalitis of right cornu ammonis*. Bronchopneumonia of hypostatic distribution. Coronary arteriosclerosis with calcification. Aortic and renal arteriosclerosis. Chronic valvular endocarditis. Chronic fibrous myocarditis. Fatty myocarditis. Chronic passive congestion of liver and kidneys. Marked chronic external adhesive pachymeningitis.

Following is a description of findings in the head:

Calvarium not notable. *Dura mater* completely and firmly adherent to calvarium. *Sinuses* negative. *Arachnoidal villi* moderately developed. *Pia mater* dark in color, with veins intensely engorged. *Pia mater* a little hazy and in the frontal regions distended with liquid. None of the intracranial arteries show macroscopic signs of arteriosclerosis. Weight of encephalon, 1,270 gm. Blood content of cortex high. There are no notable anomalies in size or arrangement of gyri. The gyri are as firm as normal except that the cornua ammonis are a little firmer than usual. Section of the encephalon in various parts shows intense injection of the brain substance affecting both gray and white matter. The right cornu ammonis shows a grayish-red linear streak running about the convolutions in the nerve-cell layers. This has an anteroposterior extent of perhaps 1 cm.

Such a case, however, fails to prove conclusively that *subsequent to recovery from an acute encephalitis or other nervous disease, i. e., after an interval*