

**ASSOCIATION OF
AMERICAN MEDICAL
COLLEGES**

**PROCEEDINGS OF THE TWENTY-
SECOND ANNUAL MEETING, HELD
AT CHICAGO, FEBRUARY 28, 1912**

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ADDRESS OF PRESIDENT

WM. P. HARLOW, M.D.

BOULDER, COLO.

Present custom and ancient usage together sanction but three different plans of opening meetings, namely, by prayer, by drawing of corks, and by the presidential address. Now, it so happens that this Association for many years past has been addicted to the last variety of openings, hence what you are now about to suffer.

A perfectly correct presidential address devotes the first ten minutes to compliments and apologies. This ten minutes I will, with your consent, save you from, that we may proceed to some of the more essential matters. I have no excuses to offer if the bulk of the matter I propose upon this occasion has been advanced to you before in these meetings. Experience of the past tells us that our great advances have come slowly, and only after some years of discussion and planning. As, witness the movement to raise the preliminary requirements to medical education. We spent years in discussing the necessity, the ideal, local conditions, how these factors could be reconciled, and in making a way that all might come to pass. With regard to all this, we are still in the transition period, for time alone can show what is best, but I venture to think there is not one among you who will not agree that raising the preliminary requirements is the longest step forward in medical education that has been taken.

Perhaps the matter of greatest importance to us as an Association at the present time is the promise of some unity in the three bodies now working with a common purpose—that is, the Association of American Medical Colleges, the Council on Education of the American Medical Association and the two Confederations of State Medical Boards. Of these bodies the only ones of any actual authority as supported by law are the Confederations of State Medical Boards. At the present time a movement is on foot to unite the two existing societies of State Medical Boards into one strong National Federation of State Medical Boards. If this is accomplished, as seems probable, the State Boards Association will have far greater prestige than at present, and it is probable that the work undertaken by that Federation will obtain a great deal better support. These three associations, then, working in general along the same lines, but each with a precedence in some one aspect, seem to be necessary. At least, under existing circumstances, there

seems to be no possible way of so combining all three boards as to form one body with some legal authority behind it. The Association of State Boards can enforce certain preliminary requirements and a certain minimum of ability among practitioners. The Association of American Medical Colleges must confine itself more and more the next few years to matters of pedagogy, and the conforming of medical schools more nearly to the ideal conditions. The Council on Education will, as time goes on, confine itself more generally to the correlation of the other departments with regard to the general practitioner.

At this time I would urge on this Association the advisability of more closely uniting each of the various associations by requesting representatives from the other bodies to be present at our meetings, business and otherwise. I think it is not necessary that the representatives be asked to vote, but I think every privilege of the floor should be accorded to them. The other associations would likewise accord to us the same privilege as the Council on Education is now according to our representative, and in this way our work would not necessarily be duplicated as at present, and it is likely that by the concerted action thus encouraged we would each be able to accomplish more quickly and to better purpose the business at hand.

The next matter of importance to us grows out of the discussion at the National Educational Association meeting held in San Francisco last summer. At this time a good deal of dissatisfaction was expressed with our present American educational methods, and some changes were proposed, which, though it is not likely that they will take effect within a number of years, it is well for us to keep in mind, since they have a considerable bearing on medical education.

It was claimed at the San Francisco meeting that we are careless in our use of time under our present educational system, and that at least considerable condensation could be effected with benefit to the pupil.

The idea is to give primary work from the ages of six to twelve, secondary work from twelve to eighteen, college preliminary work from eighteen to twenty, and at the completion of this work allow the student destined for professional or technical schools to pursue his more especial activity. This can be accomplished by Americanizing the German educational system.

Preliminary college requirements for the student destined for the study of medicine should include English, Latin, physics, biology (which includes comparative anatomy), inorganic chemistry, and enough of German for the student to read this language with some facility. As will be seen at a glance, the college-pre-

paratory is simply a premedical education, because a good proportion of the sixty possible hours are here usurped by the medical school.

Under these circumstances, it is proposed that after these two years of preliminary study of medicine, the student shall have sixty hours' credit in the college department, and at the end of his first two years in medicine he should be granted the degree of B.S., and at the completion of his medical course, his M.D. In case the student pursues college work for three years instead of two, and at the end of his three years has ninety hours' credit in the college department, then, on the completion of one year in medicine the degree of A.B. could be given.

The college faculty claim—and, indeed, in this they are right—that to give the degree A.B. is impossible where the student has had but two years in college, and of these two years the greater part is outlined by the medical school and in science. In other words, if the student has four years which are practically altogether science, and, furthermore, special science, he is entitled to the degree B.S. However, with the ninety hours' credit in the college department preliminary to the study of medicine, the student is entitled, if his work is well chosen, to the degree B.A. The B.A.-M.D., or seven-year course here outlined, is certainly equivalent to Ph.D. or Sc.D.

On a six-year course, or B.S.-M.D., it is my opinion that the M.D. degree is equivalent to a Doctor's degree in Philosophy. While the time is, perhaps, a year shorter than that spent in the getting of a Ph.D., the quality of the work done, the quantity of it, and the consistent and interrelation of the various subjects undertaken I think easily warrant the shortening of the course a year. But under other circumstances the degree M.D. is not comparable to the degree Sc.D. or Ph.D. I believe the time is not far off when a doctor's degree will mean a certain efficiency and certain amount of time spent, regardless of whether that doctor's degree be in medicine or philosophy or any other branch. This will necessitate a different degree for those medical schools not requiring college-preliminary work, and presumably we shall fall back on the English plan and give to that student who pursues for four years the study of medicine, with no college work, a degree of B.S. in Medicine. And in dentistry, instead of giving for three or four years' work, depending on the school, the degree of Doctor of Dentistry, we shall grant the degree of B.S. in Dentistry, etc.

I think there can be no question in the mind of any of us but that the reorganization of the American educational system is upon us, and while it will probably not be perfected for a number of years, still it will be attempted and gradually brought about. Nor do I believe that we can doubt the advisability of American-

izing the German plan as outlined above, by the addition of two years of college-preliminary to the high-school work before admitting the student to professional and technical schools. This brings the American student at the age of twenty years, having had two years of college-preliminary, to the same place attained by a German student on his graduation from the gymnasium. In the course of a little time, medical education will certainly have to adapt itself to general educational advances, and with this change, the bringing about of an equality of doctor's degrees I believe is also certain.

Now, to leave for a few minutes education problems in general, and to bring up for discussion some features of medical education in particular.

The specialization of medical practice has developed in cities, and thickly settled communities, until eye, ear, nose and throat diseases are scarcely treated by the mass of medical practitioners; the bulk of surgery is done by men who would not attend a case of obstetrics or one of the acute fevers; and the internist seems content to remain ignorant of surgery and the so-called specialties. This specialization has raised some of the most difficult problems in medical education. Seeing this specialization in practice, and seeing no provision made for it, except in the undergraduate curriculum, the student tends to neglect branches that he thinks he will not apply in practice. If he likes surgery, he neglects work on the eye, ear, nose and throat, or the refinements of pharmacology. If he thinks he will practice internal medicine, often spoken of as synonymous with general practice, he may fail to master basic surgical technic, or aids that ophthalmology or rhinology could afford in his chosen line of work.

We shall agree that the one supreme function of the medical school is to turn out a doctor not a scientist, not a specialist but a general practitioner who is capable of doing any sort of work that may come to him in practice, with some credit.

The undergraduate curriculum must be made to supply the knowledge and skill needed by every practitioner of any branch of medicine or surgery. To secure time for the thorough mastery of these, it must be stripped of much that is of value only in particular lines of practice.

Our first two years are undoubtedly correctly given over almost entirely to hard scientific work. It takes at least two years of close application to pure sciences—by this I mean anatomy, physiology, bacteriology, pharmacology, and general pathology—to give the student sufficient understanding so that he may pursue to advantage the study of the individual diseased condition of the individual patient. Under our present four-year system, I believe the third year should be very largely didactic, and made to cover, as far as is possible, the general didactic work in all the clinical

departments. Clinics, or dispensary clinics, or, better still, the employment of demonstration courses, can be pursued this year to advantage, to enable the student to apply and fix what he has learned from his text-book, and to explain conditions by the aid of the scientific work of his first two years. In the fourth year, didactic work on special features or unusual diseases, or particular phases of the work as developed in the clinic should certainly be pursued, so that, when the student goes into the amphitheater or dispensary as a senior student, he should have a good working knowledge of the subject from a didactic standpoint. This pedagogically, gives us all the possible advantages under our present system of four years in medical education.

The movement to include a fifth or hospital year in the medical curriculum, either as a voluntary addition to the course of professional study, or in the future as compulsory for all who seek the license to practice, raises important questions with regard to the relations of the medical schools to the hospitals in which such a year is to be spent. How should assignments to such hospital positions be determined? What can the college do to place its students in the hospital positions that will prove mutually most advantageous? What should fairly be demanded in the way of educational advantages, variety of work, hours for study, laboratory and library facilities, opportunity to see cases in an out-patient department, etc., to make such positions really desirable to our students? These are questions that should be studied from the college point of view and the results formulated at an early date by work of a committee, and I suggest that the Committee on Education be instructed to consider this question of a fifth-hospital year and report at the next annual meeting of the Association.

As regards specialization, the medical school courses must provide for that man who wants to specialize in eye, ear, nose and throat, or in some other branch; but this provision, I believe, should be a postgraduate provision, and should be recognized by an additional degree. Let us take, for example, the man who would specialize in the eye, ear, nose and throat. After graduation, we could offer him advanced work in the clinic along these lines, didactically pursuing at the same time such reviews of anatomy, physiology, histology, neurology, and so on, as may be necessary. This course should be pursued for two years, and then, at the end of the second year the student could present a thesis based on original work done in the department, and become a candidate for a special degree. The same procedure can be open to men who would specialize in surgery, internal medicine, neurology, obstetrics, public health work, etc.

To show that instruction in the specialties is the same serious business as the undergraduate instruction, the medical college must enter the postgraduate field, and must enter it conscientiously. At

the present time we have a great many postgraduate schools in this country, most of them founded on the Vienna idea—which permits a doctor who graduated many years ago and since that time has practiced in a community of three or four hundred, and decides he wants to be a surgeon, to take a six-weeks' course in surgery at a postgraduate school and return a surgeon in name with the possibility that he can make it stick.

At the present time there is no graduate school that I know of in this country which requires for admission to any of its courses a certain preliminary knowledge. Postgraduate schools are largely run because they are lucrative. The solution of the problem is not hard. One solution which to me seems good is as follows: Let a reputable medical school announce that during the summer months postgraduate courses are offered in certain subjects. Let an entrance examination be required in these and allied subjects, so that the faculty can be assured that the candidate who enters on the graduate courses has theoretical knowledge enough of the subject to pursue the work offered in the clinic to advantage.

The school should offer a correspondence course, in preparation for this summer graduate work, and encourage all desiring to enter the graduate school to pursue the work in this way. That means that the doctor who wants to do surgery in a graduate school shall, under competent teachers, be required to read certain texts on anatomy and other prerequisite subjects, and that he shall pass satisfactorily an examination upon them. Then, when he goes into the clinic, you are assured that he has theoretical knowledge enough to take lectures to advantage, knows the reason for things, and that his time in the clinic will not be wasted.

The correspondence feature in this country is rather in disrepute because of the claims made by the hundred and one correspondence schools for everything. However, the fault is not with the correspondence method, which can be made most satisfactory for this kind of work as above outlined. But if the medical school should take up the graduate work, it should take it up with all seriousness, that we may be assured that time is not wasted and that the work accomplished is worthy.

The increased interest in the wonderful advance made these last few years in experimental medicine, particularly serology, etc., makes it now a necessity for the medical school to add to its departments one more—that of experimental medicine. The undergraduate should know something of this, and the graduate who would come to study serum reactions and special problems should be given facilities for so doing. Some states in this country now provide free laboratories for the Wassermann reaction and advanced clinical diagnosis; others supply antitoxin free. This field is becoming gradually larger, and those equipped to direct this work are

insufficient in number and oftentimes, I am sorry to say, in qualifications.

The medical school should stand in much the same relation to the state that the agricultural school does. People of the state as a rule are taxed for the support of the medical school, consequently they should find the medical school of use to them, and the medical school should feel its indebtedness to the state.

Here I am presuming that the medical school is a state institution, or materially assisted from state funds. Because of the enormous cost of a medical education as compared to education in other specialties, it seems likely that only state or very highly endowed institutions can in the future afford to teach medicine. In this case, the state has a right to demand its money's worth from the college, and the college must be prepared to take over the departments of state bacteriology, pathology, water analysis, and hygiene where they can be handled with advantage to the student and economy to the state. I believe that, shortly, states will do more in the way of preventive medicine than they are now doing, and this will require a great deal of work in experimental medicine, such as the manufacture of vaccine, antitoxin, Pasteur emulsion for rabies, and so on.

Some of the medical colleges of the United States are interesting themselves in the question of extension work, and their activities have been along the following lines:

First. The giving of popular lectures on subjects of importance to the health of the individual and community.

Second. They have been cooperating with the counsel on health and public instruction of the American Medical Association.

Third. Classes have been formed in some of the smaller cities and towns of the state by men connected with the university and instruction given in laboratory diagnosis, the newer methods of treatment, such as vaccine therapy, serology, etc., the university furnishing microscopes, other apparatus, sections for demonstration, etc.

Fourth. Some of our universities have had members of their medical faculty specialize in certain branches, examine the inmates of our state institutions, such as the penitentiary, insane asylums, etc., and cases that could be benefited by operation have been sent in groups to the university or to the hospital in control of the university, and have been operated or otherwise treated free of charge with the exception of the necessary expense to the state of transportation and care.

Fifth. In some states it has been found wise to establish free dispensaries in cities other than the location of the university and its hospital. This has been done by the organization of a dispensary committee under the auspices of the university, securing a location for dispensary work, and the maintaining of definite

dispensary hours at which time the worthy sick are treated without charge.

The most serious difficulty in the way of effective teaching in medical schools at the present time is the small percentage of full-time men employed. It is perfectly foolish to assume that the man who teaches clinical subjects free or on a very small salary will teach them from other than selfish motives. Of course, what these motives may be it is not necessary to discuss here, but the fact remains, that, if he makes his living out of his practice, his practice is the thing that is most in his mind and consumes the most of his brain fat. Some of the time he will undoubtedly prepare well for a lecture or a clinic, but of that one can never be certain. Nor is it likely that the work will be consistently good over any long period of time.

There is no reason why we should expect more from a man teaching clinical subjects than from a man in scientific branches, and every institution finds it to its advantage to have the men in the first two years who teach scientific work amply compensated for the time and preparation required. The same should be true for the clinics, and until such is the case we cannot expect to get teaching in the last two years comparable to the teaching in the first two years.

One more point in discussing the teacher. In these last few years the medical school is rather inclined to exalt the position of the clinician with the biggest reputation and the largest following. Now, it so happens that being a good clinician is a very different matter from being a good teacher, and the probabilities are that the man with the lesser practice and more time will be worthy to be placed at the head of the department.

To recapitulate briefly, teachers should be appointed because of their pedagogical skill, their thoroughness and depth of knowledge, together with some ability, rather than for their reputation as clinicians or scientists. It will be easy for the American college to fall into the bad habit of the German institutions, namely, electing their professors because of their reputation as scientists rather than as teachers.

I have not gone deeply into these matters which I have brought up because the most of them have been considered at meetings before, and will undoubtedly be discussed for some years yet to come. I have taken occasion to call attention to the probable changes in the whole American educational system, that we may prepare ourselves to fall in line and to aid in these changes which can but improve the general status of the medical college and of the physician in this country.

Lastly, and most seriously, to my mind, I have again to call your attention to some grave fallacies in the curriculum of schools, not with the idea held for a minute that my opinions are final,

or that changes can readily be made, but with a view to following the discussion that we may arrive at some estimate of what seems advisable, and what local conditions will have to be considered. I urge your patience in discussing these rather dry problems of pedagogy, because it is largely to them that the sphere of usefulness of this Association is now and in the future will largely be confined.

GENERAL EXAMINATIONS IN A MEDICAL SCHOOL:
PLAN OF EXAMINATION RECENTLY
ADOPTED AT HARVARD

HENRY A. CHRISTIAN, M.D.

Dean of the Faculty of Medicine and Hersey Professor of the Theory and Practice
of Physic, Harvard University

BOSTON

The curriculum of the medical school has been a frequent topic of discussion in recent years. This Association has devoted much attention to it and it continues in one form or another to occupy much of our time. A minimum curriculum requirement for a standard medical school is the basis for admission of a medical college to the Association of American Medical Colleges, and we determine the ability of the school to give efficient instruction within the limitations of this curriculum before we accept them for membership. It is clearly understood that we have fixed a minimal standard but make no attempt to mould each school after a single fixed model. It is recognized that variations in personnel, in physical equipment and in local conditions make impossible the same type of teaching in every school. Were this possible, it would not be desirable, for no surer means of stopping progress could be conceived. It is the duty of each of us to try new methods and to share with others the experience so gained. From this alone can improvement come.

It has seemed to us at Harvard that medical schools have tended toward too great rigidity of curriculum with too many separate examinations. This has resulted in leaving too little to the initiative of the student and in producing students too crammed with facts, too little able to think and to apply intelligently their knowledge. For some years we have been attempting to change this condition, and various steps toward this end have been taken. The plan of fourth-year electives, on which I reported to you at a previous meeting in connection with the concentration system of teaching, was a step in this direction. This year we took another step in adopting a new plan of examination, which we believe will serve a twofold purpose, lessening the rigidity of the curriculum and facilitating the correlation between the different subjects of the curriculum by placing before the student a new form of test for which he must seek to prepare himself.

The new plan of examinations goes into effect with the class entering next year, and will not be applied to the classes in advance of that. Consequently four years will elapse before it has been tested in its entirety on one class. To at least five classes it should

be applied before any opinion as to its real value can be given. At this time I can only explain the plan as we propose to try it. It may be of interest to you to know of it; perhaps some will care to apply it in their school. We believe it to be a distinct improvement and one that will lead to other changes in the curriculum. Already with this in view a committee has been appointed to restudy the curriculum and to propose any changes needed to meet these new conditions. The new plan of examination is to be regarded as part of a larger plan being worked out gradually and intended to improve our medical instruction.

The new plan of examination is as follows: Written tests at the end of each course were formerly held. These are done away with, and in their place practical examinations are to be held, which are the only examinations conducted by the individual departments. The general committee in charge of examinations has supervision over the practical examinations, and they are to be a measure of the student's practical knowledge and skill. The student may choose whether he will take the practical examinations at the end of each course, or near the time of the general examination. Practical examinations in all courses included in a general examination must be satisfactorily completed before the student will be admitted to the general examination. The practical examinations are to be graded and the marks so received are to make up 40 per cent. of the grade given on a general examination.

There will be two general examinations, one at the end of the second, the other at the end of the fourth year. Both will be partly written, partly oral. The subjects comprised in the first will be anatomy, histology and embryology, physiology, biological chemistry, pathology, and bacteriology. Furthermore, this examination will assume and require an elementary knowledge of physics, inorganic and organic chemistry, and biology. The subjects comprised in the second general examination will be preventive medicine and hygiene, materia medica and therapeutics, medicine, surgery, pediatrics, obstetrics, gynecology, dermatology, syphilis, neurology, psychiatry, ophthalmology, otology, and laryngology. For the first general examination the student may choose either June or September, for the second, either June or January. This difference in time is due to the custom at Harvard of awarding degrees both at midyear and at commencement. No student who fails to pass a general examination may repeat it within the calendar year in which he failed. No student will be permitted to begin the work of the third year until the first general examination has been passed. Consequently there will be no men in the third year carrying on work conditioned in previous courses.

The written part of each examination will consist of questions selected and arranged by the committee on examinations from lists of questions submitted by the departments concerned. The written

test will be divided into two or more periods of three hours each, but there will not be separate examinations on the various subjects. The answers to the questions will be graded under the direction of the committee on examinations, not under the direction of a department. Thus, in large measure, the student is examined not by the man who gave the course. A single question may involve knowledge acquired in the work of several departments, and all questions are to be answered from this broader viewpoint and not from the viewpoint of any particular course. The grade so given on the written part of a general examination will make up 40 per cent. of the final mark for the general examination.

The oral part of each general examination will be conducted by boards of five members appointed by the committee on examinations, on each of which for the first general examination there must be at least one representative of the clinical branches, and for the second general examination at least one representative of the laboratory subjects. The board will determine by conference and vote the grade of the student, and the grade given on the oral part of a general examination will make up 20 per cent. of the final mark of the general examination. Both general examinations will be required of all candidates for the M.D. degree, whether they take their entire work at Harvard or come for advanced standing.

This, then, is the plan for examination which we have voted to adopt. It is, as you see, a very considerable departure from the type of examination generally in vogue in medical schools. Practical examinations are given at present in most of the medical courses at Harvard. These will continue to be given. The present large number of written examinations, by this plan are reduced to two, to which are added two oral examinations, both planned to determine the student's comprehension, judgment and power rather than his detailed information. I will not occupy your time with any more minute description of the plan, and I will not enlarge on what I consider to be its very great merits. We believe it to be a great improvement on our present system, but I will not engage in prophecy as to what it will accomplish; some years hence it can be reported again, and the reporter then will give you a criticism of its practical application with a statement of what modifications actual practice has required in it. I will gladly answer any questions in regard to this plan of general examinations which is to replace our former type of what might be called course examinations.

DISCUSSION

DR. EGBERT LE FEVRE, New York City: Does the head of the department hold any examinations?

DR. CHRISTIAN: The practical examination is held under the direction of the head of the department, but the committee has a right to change

or determine its character if they do not deem it satisfactory. The head of the department has to submit his plan of examination to the committee for approval. This committee consists of five members appointed from the faculty by the president of the University, as is the case with all committees at Harvard.

(Question): Is there any provision in this system for determining what work the student has done, or any record kept of attendance, or any written report of his work; for example: the number of surgical, medical, or obstetrical cases he has seen?

DR. CHRISTIAN: There has been no change made in that regard at Harvard. No attendance is ever taken in any course in the medical department at the present time. Whether men take given courses or not is determined by the practical examinations but they are not required to have a certain number of obstetrical cases, or to have participated in a certain specified amount of work in a particular department. There are several requirements in the degree and these requirements are in no way changed by this plan. The plan is simply that followed by the University of Chicago to have examinations at the end of a certain specified period.

DR. JOHN M. DODSON, Chicago: I am very much interested in the plan which Dr. Christian has outlined. It seems to me an excellent one to have tried out, and I hope that Harvard University will not run counter to any state board that states definitely what kind of an examination the student shall have. This is a fine opportunity to try out this improved plan of examining students, and it would be killed if some outside organization has the right to say what we may and what we may not do.

This will do away with the multiplicity of examinations, which are now so prevalent in many of our schools. Some years ago Professor Hektoen happened into a class-room where one of my friends, who is very fond of having examinations, was holding one, and he said: "There he is, still at it, pulling them up by the roots to see if they are growing." I have come to the conclusion that these examinations are just about as harmful to the students as it would be to pull plants up by the roots to see if they are growing.

We have no stated examinations. We have adopted a plan that leads us to a very close supervision of the student's work, particularly that of the poor students. Unfortunately, the dean only sees the poor students. They have no opportunity to see the work of the good students because there is no necessity for it.

We have a committee on promotion which meets as soon after the new quarter begins as the records are received from the registrar. The credits of all students conditioned, or nearly up to the passing line, are examined, and it has been interesting to me to see the intimate, personal knowledge of the various students that will develop around the conference table. The teachers always seem to know whether the particular student under discussion was sick, is incompetent, has been dissipating, or what the trouble is, and the dean is told what to tell him—whether he shall be given another chance or not. That is as far as our work has gone.

I hope that this plan will be well tried out, and that from it will come some method of examination that will enable us to judge of the student's power to think, not the amount of facts that have been stuffed into him by someone or that he has been able to stuff into himself.

The most difficult point I foresee is this: the extreme difficulty of getting some instructors, particularly those not giving full time to the work, to keep accurate records and present records that are worth while. That is, I believe, as much his duty as is teaching. He should be able to tell, without an examination, what kind of work the student has done. I have not given quarterly examinations. I think they are absolutely unnecessary. While I do give written exercises as a pedagogic method I do not find it necessary to give them as a test of the student's ability. At the end of a period the instructor should be able to say: John Smith is entitled to grade A, or Bill Jones is entitled to grade B without the harrowing process of a written examination.

DR. J. A. WITHERSPOON, Nashville: I do not believe some of you realize just how many, many examinations some schools are inflicting on these boys. I know of one or two instances where the whole faculty have combined to make up these examinations. I know of another where five professors taught surgery in a college and each man held an individual examination. It is simply cruelty to animals. I have never heard it so well expressed as in that phrase of Dr. Dodson's, "pulling them up by the roots to see if they are growing." I can imagine that this process is just as harmful to the progress of these boys as it would be to pull up plants every little while to see if they are growing. I do hope that some plan can be formulated by which we can get rid of a great many of these examinations.

It does not really give much information about the boy. It is the man who teaches him daily who can evaluate his work, and he ought to be able to grade him. Dr. Christian has given us something to think about, and we should try to curtail in our own households some of these frequent examinations.

ON THE IMPROVEMENT OF MEDICAL TEACHING

C. M. JACKSON, M.D.

COLUMBIA, MO.

The watchword of the present is conservation. Especially in the industrial world it has been shown that great improvement is possible by the elimination of needless waste of time and energy. Though not yet so clearly recognized, this is equally true in the field of education. Teachers, especially those in the higher institutions of learning, are notoriously neglectful of the principles and technic of their profession. Unquestionably this results in great losses due to inefficient methods of teaching. These losses, in medical education, may be conservatively estimated at 20 to 25 per cent. In other words, the adoption of more efficient methods of teaching would probably enable us to gain the equivalent of a whole year within the time now devoted to the four years' curriculum. Is not the possibility of such a tremendous saving well worth our serious consideration?

At the outset, it should be clearly understood that *uniform* methods of teaching are neither necessary nor desirable. The methods in detail must be determined by the individual teacher to meet best the varying local conditions. But equally true is the important fact that all efficient methods of teaching must be based on well-known and well-established principles of pedagogy.

Efficient teaching requires three essential conditions: (1) Complete mastery of the subject-matter on the part of the teacher; (2) a clear notion of the aim of the teaching; and (3) well-chosen methods of accomplishing the aim.

The first and most essential condition, that the teacher must be a master of his subject, is everywhere clearly recognized, and will not be discussed in the present paper. The second and third conditions are those most often overlooked; and it is therefore necessary to emphasize certain fundamental principles of aim and methods, the neglect of which is largely responsible for inefficient teaching.

In the first place, let us therefore consider the aim of medical education. In this all will probably agree that the *primary* aim of medical education should be to train efficient practitioners.* And it may, furthermore, be taken for granted that an efficient practitioner is one who is able to observe accurately, to think clearly, and to act wisely in his medical practice.

* In addition to the education of practitioners, the medical school has other important functions, such as the advancement of medical science through original investigations, but these are not within the scope of the present paper.

Keeping in view this primary aim and ultimate purpose of medical education, to train efficient practitioners, we may next consider the methods, the ways and means, whereby this aim is to be accomplished. If the end is to be reached most directly, if the student is to be trained most economically for the greatest efficiency, it is evident that the instruction must be adapted to his nature and learning capacity. How shall this be done? Let us see whether there is any rational principle to guide us in adapting our methods to the nature of the student. Upon this question an important light is thrown by the history of education.

A century ago, practically all teaching was based on the doctrine of authority. It was the function of the teacher to *tell* the student what he should know and do. It was the duty of the student to be a passive recipient—to follow faithfully the precepts of the teacher. This doctrine of authority, however, was found inefficient and has long since been abandoned in rational education. It is now generally recognized that all education really worth while is based on *self-activity*. This principle, advanced by Froebel, is now so thoroughly established in education that it may almost be taken as self-evident. Self-activity is the keynote of modern pedagogy. And yet, while recognized in theory, this fundamental principle is often almost totally neglected in practice. In the light of this principle of education by self-activity let us review briefly certain phases of methods in medical teaching.

In developing the self-activity of the student, it is evident that the methods first of all must arouse his interest and attention. Interest we know to be most intense in things which satisfy conscious needs. Now the medical student wants above all to be a good practitioner. If he knows that a certain thing will help him to accomplish this, he is intensely interested, and will exert an active effort to secure it. "The mind interprets impressions from without, not according to their intrinsic nature, but according to their relation to the needs of the organism" (Bagley). Common sense and good pedagogy therefore agree that in teaching any subject in the medical curriculum, the teacher should make sure that the student realizes its bearing on his later work.

Some may conclude from the foregoing that, since time is limited, only the so-called "practical" facts—those that are of obvious utility in the practice of medicine—should be taught, and that no time should be wasted on "theoretical" aspects. While this argument may appear plausible at first glance, its fallacy is apparent on closer examination.

In the first place, it is impossible in any given subject to select out only those facts which may later be needed. Moreover, even if such facts could be selected, it would be impossible to teach them as bare, empirical facts in such a way that the student could understand, remember and utilize them, without a comprehension

of the science of which they form a part. The "theoretical," as Bagley states, "contributes to the coherence of the various facts and principles of *knowledge*. Its value cannot be disputed, for any attempt to 'cut out' the 'impractical' parts invariably results in the inefficient functioning of the remainder. Short courses that give only the essentials, fifth-rate colleges and normal schools that educate you while you wait, are sufficiently damned by their own products."

There is, it must be acknowledged, some truth in both the "practical" and the "theoretical" points of view. The best methods of teaching will therefore utilize both. While each subject should be taught from the theoretical, scientific point of view, at the same time its practical application should be kept constantly in mind.

In selecting material to develop the essential principles, those facts should be chosen which will also probably be of greatest intrinsic value for later work. Anatomy, for example, should be taught, not as a mass of empirical facts, but as a special branch of biological science. But in selecting from the huge mass of available data the facts necessary to illustrate the science of anatomy, so far as possible those facts should be chosen that are also of direct, intrinsic value in physiology, pathology and clinical medicine.

If this plan were consistently followed out, and everything excluded excepting facts, especially those of intrinsic value, necessary to develop a scientific basis, a "working-knowledge," for each branch of study, the amount of subject-matter presented in each could be greatly reduced. We all recognize that the curriculum is now over-loaded. It is impossible to teach so much and teach it well. "What men need is as much knowledge as they can assimilate and organize into a train for action" (Huxley).

To develop in accordance with the foregoing plan the most effective methods of teaching, it is evident that each teacher must understand the curriculum as a whole. The laboratory man must be familiar with the clinical work. But this is not all. Since good teaching must take into account that which has gone before as well as that which is to follow, it is equally evident that the clinical man must be familiar with laboratory subjects and methods. We cannot expect the best results in medical education until there is a better understanding and more cooperation between teachers of the various subjects all along the line. As medicine progresses, all phases appear more clearly as varied manifestations of the same underlying biological science, and only when this is realized will the clinical and laboratory work be more closely knitted together.

We have seen that to interest the student and arouse him to self-activity, he should be made to realize that each subject contributes an essential part in training him for the desired end. We

may next inquire as to *how* he must be self-active. Since efficiency in practice consists in accurate observation and reasoning, resulting in wise action in dealing with medical problems, his training should develop self-activity in these very lines. He must observe, think and act for himself. For this purpose almost ideal facilities exist in our laboratories and clinics. Unfortunately, however, we are far from utilizing these facilities to their fullest extent. Our methods fail to make the student self-active, especially in observation and reasoning.

First we may consider observation. This can be cultivated only by actual observation of medical phenomena on the part of the student. It is, however, a surprising fact that in many laboratories and clinics there is no opportunity for the student to make an *original* observation. Why? Simply because through a pernicious lecture system he has already been told all about what he is to see, before he has ever had a chance to observe it for himself.

It is furthermore a fundamental law of learning (technically the doctrine of apperception) that we cannot comprehend new facts except on the basis and in terms of previous concrete experience. Hence the dictum: "In teaching, always proceed from the concrete to the abstract; from the particulars to the general; from the known to the unknown." It is, therefore, evident that to give lectures preceding practical objective study not only prevents the exercise of original observation but also inverts the normal procedure in the process of learning.

Much time and energy is sometimes thus wasted in trying to teach by lectures what would be quickly and easily comprehended *after* the fundamental data had been acquired by objective study. In some schools, for example, the junior year is largely given over to lectures and other didactic work which is supposed to prepare the students for the actual clinical work, the latter being chiefly concentrated in the senior year. This, it seems to me, is a fundamental mistake. If there were only one alternative, it would be better to reverse this order, giving the clinics first, and the lectures later. In actual practice, however, they are best intermingled and closely correlated, care being taken always to provide the objective basis before the more abstract generalizations are considered.

Even when the practical work is placed first, however, it by no means follows that adequate training in observation will result. In both laboratories and clinics it is a common practice as a preliminary step to *tell* the student (either orally or by printed guides) what he is to see. The student thus is not required, and indeed has no opportunity, to observe for himself. Practically all there is left for him to do is to verify what he has already been told. However valuable this may be, it does *not* develop power of original observation. It is of course desirable to precede

all practical work with a brief introduction which will enable the student to proceed intelligently with his work. Such an introduction, however, should be merely for the purpose of explaining technical procedure and of raising questions the answer to which the student should seek by original observation.

The ideal plan is thus for the student to work out everything for himself by the method of discovery. This applies not only to the original observations, but also to the later process of reasoning, whereby we proceed from particular data to general conclusions, and thence to rational action. The method of self-activity may therefore be expressed in a negative way by the following practical rules: Never tell a student anything he can observe for himself; never draw a conclusion or solve a problem which he can be led to reason out for himself; and never do anything for him that he can do for himself.

Unfortunately, however, there are limitations to the application of this method. It is difficult to apply successfully, requiring skill and experienced judgment on the part of the teacher. Lack of time would moreover prevent the student from repeating the history of the race by the method of discovery. But though difficult and slow at first, by working out for himself at least the fundamental data, a solid basis is laid which makes possible more rapid progress later. Time lost at the beginning is thus time gained in the end. We should, therefore, insist that *so far as practicable* this ideal method be applied for the purpose of training the student to self-activity, in developing his ability in observation, reasoning and action.

As supplementary to the foregoing, it is usually necessary to adopt easier though less effective methods of instruction. Thus where necessary data cannot be secured by original observation, they may be supplied by the usual type of laboratory or clinical demonstrations, which the student can verify. Next in value below this as a means of imparting knowledge comes the informal lecture or recitation, illustrated by demonstrations, models, pictures, etc. Next comes the text-book, and lowest of all in the scale is the formal lecture. Curiously enough, the lecture is also the *easiest* method, by which *apparently* the greatest amount of information is gained with the least expenditure of energy, at least on the part of the student. But this is a delusion. The knowledge thus gained is unreal and transient. It is "in at one ear and out at the other."

As we should naturally expect from the principle of self-activity, the ease of the method is apt to be inversely proportional to the efficiency of the instruction. In order therefore to train our students most efficiently in self-activity, we should use the maximum amount of the more difficult but more effective methods and the minimum of those easier but relatively inefficient.

This will, perhaps, be made clearer by a brief illustration from personal experience. To learn, for example, the normal histology of any given organ by means of a stained and mounted section, this should first be studied by *original observation*, the students observe the structure with naked eye, low power and high power of the microscope, and without previous description by teacher, book or laboratory outline. They record their observations by sketches and brief notes. The aid of the teacher at this stage should be restricted to questioning the individual students so as to recall related facts previously studied and prevent the student from going too far astray.

At first, students are apt to be utterly helpless when thus thrown largely on their own resources, but they soon develop surprising powers of observation. This "investigation" occupies the first part of the laboratory period. The teacher then informs the class regarding the section they have studied, and discusses briefly their mistakes of observation. He directs them in restudying the section, and in correcting their mistakes. The students now extend their knowledge by verifying the statements found in their textbooks. Demonstrations are made to furnish additional data and elucidate the more difficult points. Drawings are finally made by the students, to fix the corrected impressions on their minds.

At a later class conference, the students are led to review the facts learned, to correlate and interpret them, and to reason out general conclusions or laws of structure. These laws they utilize and apply in the subsequent work. Brief written reviews are also frequently held. Occasional lectures by the teacher elucidate the more difficult phases, and indicate the relations of histology to physiology, pathology and clinical medicine. The results are satisfactory as shown by final examination, both written and practical, and by the extent to which the students are able to retain and utilize their knowledge in later work.

The foregoing method illustrates how students may be trained to self-activity in observation and reasoning, and to a certain extent in application. The application of the generalizations reached by observation plus reasoning, while essential in every subject, is especially characteristic of the clinical work. That the student should be self-active in his clinical work, that to acquire skill in the practical application of his previous knowledge he must "learn by doing," is universally recognized. It is therefore unnecessary to dwell on this phase of the subject. It may be worth while however to remember that above all in the clinics, "the main business of the teacher is to render his services unnecessary" (Strayer).

To summarize the foregoing: It has been maintained that in medical education there is great need of more effective methods of teaching. Efficient teaching requires a clear view of the ultimate aim, which in medicine is to train efficient practitioners. To accom-

plish this aim, rational methods of teaching should develop in the student self-activity in observation, reasoning and action. While some may be unable to accept fully the ideas here presented, all will surely agree that great improvement would result if medical teachers would study more carefully their educational methods.

The younger teachers who are so fortunately located could greatly improve their efficiency by taking work in the schools of education connected with the various universities. Those unable to do this should at least study the principles of pedagogy, which are available in numerous books. Although pedagogical literature deals chiefly with elementary, rather than advanced or professional education, it is nevertheless of great service, for the same fundamental principles extend throughout, from the kindergarten to the university.

Among those books which may be recommended as helpful are the following: Spencer, *Essays on Education* (a recent edition, with introduction by ex-President Eliot, in the "Everyman's Library" series); James, *Talks to Teachers on Psychology*, etc. (Holt); Charters, *Methods of Teaching Developed from a Functional Standpoint* (Row, Peterson & Co); Bagley, *The Educative Process* (Macmillan); Thorndike, *The Principles of Teaching Based on Psychology* (Seiler). And in conclusion, permit me to suggest that a more thorough discussion of educational methods and principles in our Association meetings, and also in the faculty meetings of our various medical schools, would result in greater efficiency in our teaching.

DISCUSSION

DR. EDW. JACKSON, Denver: The greatest obstacle, probably the greatest and most-general, to self-activity of students is to have their mental energies and mental mechanism monopolized by something thrust on them from without. Italy has recently written a new gospel of education which is not so very different from the old. Dr. Montessori has stirred up methods which are not only compelling the observation of Europe, but of educators beyond Europe. Her method is this: that the teacher shall not do anything, fundamentally, but observe the activities of the child, find out whether they are good or bad, and on that basis draw conclusions. The first mistake of medical educators is their insistency that the first requirement is that the teacher shall know his subject. I would make the first qualification his ability to know what is in the mind of the student, what has been taking place there during his previous education, and what is actually taking place there at the time. To know that is an enormous help to the student.

A few months ago in a consolidation of medical schools I came to teaching students what they were supposed to have been over before—the use of the ophthalmoscope. I think there were few in that class who did not see the fundus of the eye. Two or three came to me afterward and said "I have never been able to do that before," and I found that they had been looking in the wrong direction for the optic disk,

they had known where it was but had gotten above it, or such a simple matter as the fact that the student had had his eye too close to the anterior surface of the eye had made it impossible for him to focus on the fundus.

These are some of the simple obstacles that the student has to overcome. They are strewn all along his path by the formal lectures. They become so formal to them, so habitual to them, that a certain proportion of each class of students never get over them.

DR. PAUL G. WOOLLEY, Cincinnati: It seems to me that the remarks of Dr. Jackson, of Denver, call attention to one of the most fundamental points of the remarks of Dr. Jackson, of Missouri. That is, coordination of knowledge. Anatomy, for instance, has been taught from the standpoint of anatomy, not from the standpoint of surgery or pathology. To be sure we have had surgical anatomy and pathologic anatomy, but they have come after the course in general anatomy itself. Now, the course in anatomy could be helped by coordination in surgery and medicine. In finding the optic disk, students could be taught why they are finding the optic disk, what its relation is to other parts of the eye, etc. In teaching orthopedic surgery it would not be out of place to have an orthopedic surgeon speak to the class of the importance of learning the anatomy of the joints. It seems to me that we could raise the efficiency of our teaching by coordination of the courses. Not only would we have better observation on the part of the students, but we would bring the departments closer together and in this way a great waste of time could be obviated. Much time could be saved to gynecology and to pathology, to anatomy and to surgery, and to many other branches by coordination of the studies, and a good deal that now goes into these studies could be weeded out.

DR. EGBERT LE FLVRE, New York City: One of the reasons why our methods are as they are has been our pernicious and ever-present method of examinations. Practically, when a student enters college, his first object is to pass the examinations. The multiplicity of examinations has been the one thing that has demanded that medical education assume the definite form that it has. We have, therefore, before us, as teachers, this handicap in pedagogy and as long as this method prevails our pedagogy must depend on these examinations. Our teachers can do no better work than to study the curricula of other schools, as well as that of their own school, to see how the powers of observation of the student can be improved.

I have for three years made a study of the curriculum of our school, and I have found that whenever new schemes have been presented the students do not take kindly to them. The students become restless and say "is this preparing us for the examinations?" and we find that their whole thought is centered on the examinations and the best teacher is the one who can give them the greatest number of facts that they can memorize and have ready at hand. So I believe that the faults that have crept into our teaching methods have been due to the multiplicity of examinations and the method of conducting them.

THE MIGRATION OF STUDENTS

A PLEA FOR THE INDIVIDUAL IN EDUCATION

E. P. LYON, PH.D.

ST. LOUIS, MO.

The Chairman of our Judicial Council, Dr. Means, in a recent address on "The Relations of the Medical Colleges in the Matter of the Migration of Students," has stated that these relations should be adjusted on the basis of the Golden Rule. With this I heartily agree. I would, however, call attention to the wording of the Golden Rule, "Do unto others." This seems to imply that our relationships are multiple rather than duplex.

There is hardly a problem in ethics to be settled on the basis of "Thou" and "I" alone. No case of migrating students should be considered from the standpoint of the colleges alone. In every instance the public or state has a claim on our consideration, for we are the servants of the state in the making of physicians.

We are also in a peculiar and intimate degree responsible to the student himself. We take his money; we take what is more valuable than money, his time. We modify his whole life. To take out the human element from our work; to claim that the student acts always of his own free will; to make our colleges by inflexible rules mere mechanisms for grinding out as doctors those individuals alone who can fit the hoppers and cogs of the machine—to do these things is to take away all proper significance from education.

The more I consider it the more I am convinced that our personal duty to the individual student is our fundamental duty. If we can do right by the individual student, we shall do right to the other colleges and to the state. If we do right by the individual student, we shall see that his obligations are met; that his deficiencies are made good; that he is protected from his own misdirected inclinations; that he is kept, if need be, from a profession for which he is not fitted. I propose, therefore, to discuss the subject assigned to me from the standpoint of the individual student.

I would strongly emphasize that my argument is not to favor lower standards. The poor boy story and the easy pathways to practice do not appeal to me. Any one who draws from my expressions regarding the rôle of rules and regulations the conclusion that I favor the removal of the safeguards to medical practice wilfully reads into them what is not there. On the contrary, I believe that the efficient judgment of the individual case, whether by entrance examiner or faculty, or state board, or all three of

these, would constitute the best possible safeguard and one which ought to be added to the regulations and examinations, which at present constitute the chief protection against the inefficient and unprepared.

Strictly speaking there is no such thing as equality. Variation holds everywhere in the social world, as it does in the animal and plant world. Every case is an individual case. Education will reach its highest when it becomes individual.

The individual student is not the student *en masse* nor the average student. The individual student means individual consideration. He means the breaking loose from rules and the consideration of pertinent facts. He means the application of principles rather than formulas. He is a difficult problem not to be solved by engineering handbook nor plotted in two dimensions.

I am provoked just here to the further platitude that we have in our political and social life, as in education, too many rules, too many laws, regulations, prohibitions. (I suppose this is because we are so infernally human that we cannot be trusted to apply the Golden Rule, which our Chairman rightly considers our standard.) At the same time that we are burdened with laws we have no adequate mechanism for securing justice to the individual. This is true in every relation of life.

Let us glance for a moment at the legal restrictions placed upon medical education. The law compels every man who desires to enter the medical profession to attend four sessions in a medical school. It takes no cognizance of the fact, recognized I am sure by every man here, that some men would be competent in three years, more competent in fact than others in thirty years.

The law provides that the four sessions shall be in four separate calendar years and disregards the fact that some students could work to advantage eleven or twelve instead of eight or nine months in a year. Why should the law permit the doctor to practice twelve months in a year but allow him to study only eight or nine?

The laws do not permit that any time credit be given for attendance in a college of arts or science, yet in particular cases the work done there is better than that of some medical schools.

Now, I am not arguing that these laws are bad. Some of them are undoubtedly artificial. But even these have probably been necessary, as applied to average students and average colleges. The trouble is that no arrangement is provided by which the particular case can be excepted. The law, we are told, is no respecter of persons. So much the worse, I retort, for the law. And the law by the way is beginning to recognize this fact, as witness the more enlightened way in which it is beginning to deal with juvenile offenders. Each case is settled on its merits and by careful judgment of experts.

In our Association also we have laws. With much labor we have formulated a curriculum from which no college can deviate in any particular more than 20 per cent. Yet today I have in my laboratory a young man who shows talent as an investigator. He desires to become and I am sure will become a professional physiologist or pharmacologist. I should be a traitor to my science if I compelled or advised that young man to take the straight, fixed curriculum. He should have a special course laid out to meet his special needs.

But someone objects, "This is unsafe; this young man may later go into practice." My critic is laboring under the belief that our fixed curriculum contains all the subjects and only the subjects without which one cannot safely go out as a physician. My answer is, I know the man and his ability. The curriculum, I may further remind my critic, is literally a race course. We do not use the same kind of track for automobiles and aeroplanes and steam yachts.

This criticism and my answer to it lead me to state the first condition for dealing properly with the individual student, whether as regards curriculum, migration or any other matter. *Someone has got to know that student and the facts about him.*

A second critic may have said to himself when I suggested a special curriculum for my student in physiology, "It will be against the Constitution of the Association." My reply is, in the famous words of the practical statesman, "What is the constitution among friends?"

And that leads me to enunciate the second condition for dealing with the individual student. *There must be a body of friends, friends of the student, friends of education, friends of the public, who shall determine when, where and how the constitution (i. e. the rules and regulations) may safely be broken.*

You catch the drift of my thought: a college may be run in two ways. It may be run by inflexible rule. Students are received, classified, advanced, rejected, graduated, by regulation and statute. All that comes in, whether iron, steel, lead, copper, brass, silver or gold, is drawn through the same hole to wire of the same size. Such a college is not a human being. It is a machine, and it makes no mistakes. It needs no intelligent supervision. You just start the wheels going and watch the rollers turn merrily on.

Or a college may be run for the individual. It may have small regard for paper standards, have few regulations, have a flexible curriculum, care little for classification, permit specialization. It may make wire of iron and steel. It may turn the lead over to the plumbing industry. It may make scientific apparatus of its copper and brass. It will surely make jewels of its silver and its gold. Such a college is human. It makes judgments, choices, designs. It is not a machine, and it makes mistakes. It can only avoid

making many mistakes by the most intelligent supervision and the combined judgment of experts.

If I may change my figure of speech, the rules, regulations, precedents and formulas for running a school correspond to the reflex mechanism in an animal. They adjust it well to the average conditions of environment and govern certain subordinate functions. But the animal which is purely reflex stands low in the scale. And so does the college that runs by rule and formula. What is needed in the animal is a superposed cerebrum, which can inhibit reflexes and regulate behavior in accord with a greater complexity and continuity of stimuli. Speaking as a man of the street—and not as a scientist nor as a theologian—what the animal needs is a soul. And that is just what the college needs. The soul of the college should be such an organization of experts as can exercise safe and sane judgment under varying conditions. This paper will be concerned, first, with the organization of such a body of experts; secondly, with the methods to be used by them in taking care of migrating students.

Regarding the first topic, organization, I believe that it is unsafe to leave to the dean alone the decision of important matters relative to the individual student. The dean even in the cases where he devotes a large share of time to his office cannot know the work of the student in all departments. He may it is true have the record of grades, but these are not the intimate personal data on which the individual case must be settled. The grades constitute a part of the regular reflex machinery which disposes very well of the average student. They are of value, but should not be the sole criteria for deciding questions regarding particular students.

Another reason why the important individual case cannot be left to the dean is that he is almost always a professor, and looks with the usual jealous but magnifying eye on the importance of his own department. The individual student must be considered from all sides.

If the dean cannot dispose properly of the individual student, much less can a secretary or registrar, who is usually not an educational officer in the proper sense but strictly a part of the reflex machinery.

The individual student, furthermore, cannot be considered properly by the faculty. This is not easily done in a School of Arts or Science, and is even less feasible in the average medical school, where many of the professors are in medical practice and give only a portion of their thought to educational problems. The word of a clinical professor lecturing one or two hours a week is of less value as regards an individual student than that of a paid assistant who meets the student daily in the laboratory. Moreover faculties meet infrequently, and the individual case needs immediate consideration and action.

A committee of the Faculty, provided it has power to act, can do the work better than the Faculty, but here again there are objections. The Faculty usually consists only of professors, and a large proportion of them do not come into intimate contact with the students. The committee is likely to partake of the same character and often degenerates to one man control.

Finally the case of the individual student should not be referred piecemeal to the individual department heads. Take the case of a migrating student, for example. If he is sent in turn to the professors of chemistry, anatomy, etc., each settles his part of the case without reference to the others. One exaggerates the value of his own teaching and will give no credit for work done in another laboratory. Another is too lenient or does not wish to be bothered. Conditions are imposed without regard to general time schedule, and no consideration is given to the character and needs of the particular student.

The case of the individual student should be referred and the power to break rules and precedents should be given to those who by training in educational methods and experience with students know the individual case and what may safely be done. These are essentially the paid, full time instructors, with such few others, perhaps, as have demonstrated that they are pedagogues as well as practitioners. The full time instructors are educators, not physicians. They are paid to do work of the kind we are considering as part of their "teaching." They can be called together frequently.

In the school that I represent the paid teachers (with the addition of four heads of clinical departments) constitute the Council. All paid teachers except student assistants are included. This Council has full power to settle all questions relative to students. The remainder of this paper will be chiefly concerned with the methods by which the Council disposes of migrating students.

In presenting the work of our Council I would particularly disclaim a new discovery in education. Somewhat similar methods are used elsewhere. Nor would I claim that our organization in its exact form should be generally adopted. Each school must work out that form of government which best suits its environment. I use my illustrations from my own experience not because they are noteworthy or unique, but because they constitute my store of available facts.

Take up now the specific topic of discussion, migrating students may be classified as follows:

1. Good students who come from "good" schools.
2. Poor and doubtful students who come from "good" schools.
3. Students who come from "poor" schools.

(By "good school," I add parenthetically, is meant a school which one considers as good as or better than the particular school one individually happens to represent! I consider Western Reserve

a good school. My friend Waite considers St. Louis University a poor school. I pass on the compliment by considering certain nameless institutions poor schools. The point is that in this matter of migrating students the American Medical Association classification is of little value.)

Referring to my first class of migrating students, it is a lamentable fact that few good students come from good schools. The migration of students for the sake of coming under different environment, varying methods and special professors, so common in German universities, is almost unknown in America. This type of migration has always been discouraged by the colleges, and the fixed curricula have not facilitated it.

A few good students change colleges for reasons unconnected with education. A few change on account of legitimate personal grievances. (I cannot agree with Dr. Means, who states that he has never known such a case. On the whole, however, we will all agree that tales of personal grievance are to be taken in homeopathic doses, with plenty of water). Whatever be their reason for changing, provided it is honorable, the good students who come from good schools should be accepted on the basis of equivalence of discipline, rather than exact equality of subject matter. If the student, let us say, has had 600 hours of anatomy and 500 hours of physiology, whereas your curriculum requires 1,000 hours of anatomy, (heaven save you) ! and only 300 hours of physiology (heaven save you again !), it is neither necessary nor just to condition the student in anatomy. If you are satisfied that the teaching is good and thorough in the other school, you can overlook differences of this kind. Of course if some important subject has been omitted on account of difference of curriculum, it must be made up. On the whole, the good student should slip in easily on his record.

Allow me to introduce here a paragraph on the general subject of migration of good students. I believe it should be encouraged. If we could implant the idea that the goal of the student's desire should be thorough knowledge of anatomy, of physiology, of medicine, and not the possession of a certain piece of sheep skin, we should be on the way to better things. And if to the student specially interested in physiology I should say, "Professor Blank is one of our best physiologists; why don't you take a year with him?" I should be giving scope to that student's interest and broadening my science at the same time. If we proceeded in this way, the time might come when students would select men instead of schools. And when that time comes, a professorship will be worth working for and worth working to keep, having been attained. When those good days arrive, we shall not find it so difficult, perhaps, to find men willing to enter the laboratory sciences as a career. But whether these good results follow or not, I believe that the migration of students should be encouraged from the standpoint of

breadth of culture and training. And our purely American, whoop-it-up notion of "college spirit" should be somewhat abated in favor of a better ideal.

Taking up the second class of migrating students, the poor student from good schools, we have our most difficult proposition. When a man with a poor record comes from Washington University or Michigan or Missouri, I have chills. And when he tells me he comes because of our superior facilities, I have an internal spasm. Such a man may have a "good constitution." He may "recover," but the prognosis should be "guarded." The Council of our school has, therefore, found it necessary to decline to receive such students into our senior class. The reason is based on my first principle enunciated above. We must know the student, and we cannot do that in the senior year.

A second provision is that much of the credit allowed is contingent. For example, histology may be credited provided the student makes a good grade in pathology; or credit in dissection may be made contingent on topographical anatomy. We believe this arrangement is logical, and it certainly has a good effect on the student.

If the student has a failure from his former school, he is obliged to take further work in that subject. But we have no hard and fast rule about repeating laboratory courses. Too much repetition of elementary work is discouraging. Short special courses are better; and we have frequently organized such courses, primarily for the third class of migrating students, but to the great advantage also of the second class.

Even if the student is to be classed as a junior, we always hold him for one intensive laboratory course, commonly topographical anatomy (cross sections), which is a hobby of ours and on which we have a taskmaster not to be evaded, tricked or cajoled.

We find our summer school of great value in whipping delinquents into line. This is true both of our own backward students and of those who come from other colleges.

Taken all in all the second class of migrants are not altogether a discouraging body of men. Frequently they see the error of their ways and settle down to business. Sometimes discouragement in one environment is followed by a better spirit under new conditions. The mentally deficient, the ill prepared, the congenitally slothful, the habitually dissipated must of course be dropped. Our primary idea is to keep the student long enough under the close supervision of the paid instructors to know whether these qualities were the cause of the original failure.

The third class of migrating students includes those who come from poorer colleges. Mr. Flexner has discussed these in some detail. He shows how a student who originally could not enter a college may eventually come in with advanced standing through

attendance in one or more inferior institutions. The student thus evades the rules of entrance of the first school. This is deplorable. And for the particular condition that Mr. Flexner discusses, there is only one proper procedure, and that is to enforce the same rules of preliminary education on students who enter with advanced standing as on those who enter the freshman year. I shall say nothing further on this point.

On the other hand the assumption that a student from an inferior school is himself necessarily inferior is absolutely wrong. In fact, my experience is that such a student is generally a very good man who desires to better his condition. And in contrast to the heart failure with which I meet the incoming migrant from Michigan, might be mentioned the welcome accorded the students from several nameless institutions.

Now, how should such a student, as an individual, be dealt with in justice to himself, to the college and to the public? As to the public, it is plain that the student should not be graduated till he is competent. As to the college, it is evidently bad policy (to put it narrowly) to graduate him before he is safe. As to the student, he has put in his time in the inferior school and has presumably gathered something. To refuse all subject credit and make him repeat all the previous work arouses revolt, and in my opinion is unjust. To refuse or diminish time credit beyond what is needed to know the student and his capabilities is also wrong. Time is not money, gentlemen. Time is life and not to be handled carelessly; not to be required of the student as from inexhaustible store, but rather as that which not enriches us but makes him poor indeed.

I shall be obliged to discuss this class of students, as previous ones, from the standpoint of my own experience. The student is brought before the Council; his credentials and grades are presented; he is questioned as to the nature of his previous work; and the decision, which is always a tentative one, is based not upon fixed rules, but upon careful consideration of that case.

The principle of contingent credit is frequently applied. For example, credit in dissection, if he passes in topographic anatomy. This procedure is safe and it is sound pedagogically.

The principle of additional required laboratory work is applied, particularly by demanding attendance in summer school or on short special courses.

The principle of examination is applied, but not universally. For example, I frequently credit a student in freshman physiology if he passes on the sophomore work, although the topics considered in the two courses are different. I think I can discover whether he can think physiologically as well from one part of the subject as another.

The principle of requiring a sufficient attendance to give us knowledge of the student is insisted on. No student from an inferior college is received into the senior year.

To the furtherance of our knowledge of the student's ability as a laboratory worker, we always require at least one complete laboratory course, even if the student is admitted to the junior year.

On the other hand, we are not particular that every course which the student has had shall be of the same length, character and strength as our own. If he has had a fair course in bacteriology, but not so good as ours, I am willing to give him credit and let him take instead an intensive course in, let us say, pharmacology. Our idea is equivalent discipline; not parallelism of curricula.

That the students from poor schools have usually succeeded is shown by our experience during the past five years. The leader in our present senior class is a student who came into our junior class last year from a school which would be unrecognized by many members of this association. Of course, some have fallen by the way, and either voluntarily withdrawn or been dropped by the Council.

There are a few more self-evident propositions to be considered. For example, the school from which the student comes should be conferred with. Not only should the grades of the student be asked for, but all facts concerning him which will assist in properly disposing of his case. That all obligations to the first institution, including the payment of fees, should be satisfied, is a clear demand on the student as an honorable man, seeking to enter a gentleman's profession. We should refuse him unless he meets such obligations.

There are certain institutions, on the other hand, which refuse to respond to requests for grades or information regarding students who wish to enter another school. I hold that such students may properly be received on their class grades or attendance certificates only.

In the enjoyable correspondence which I have had with Dr. Means in regard to this paper, he has raised several specific questions of interest. "For instance," he says, "a student applied for admission to the Starling-Ohio last fall with credentials of having completed his sophomore year and wanted junior standing. The card showed six or seven conditions on regular examinations, and that they had been removed by subsequent examinations—three or four subjects requiring two efforts. I could not give him," continues Dr. Means' letter, "more than sophomore standing, which he refused to accept and returned to his old college."

This is one of my heart-failure cases. I believe the best way would be to refuse the student altogether. But we have never reached that stage yet. Our Council would probably have allowed the student two years' time credit, but we would have loaded him up with conditions and summer school work enough to test him

pretty thoroughly. Dr. Means' even more drastic action is commendable. One thing is certain, if you grant these students full junior standing, you will suffer for it. You cannot catch these migratory birds in the junior and senior years. The cages are too full of holes.

This case brings up another topic, that of giving students passing grades on condition that they go to some other school. This is a despicable practice. Some schools not only pass on their lemons to other institutions but give them certificates as oranges. We ought to swear by the shade of Hippocrates never to be guilty of that injustice—for injustice it is to the student, to both colleges and to the public.

Another experience is that which Dr. Dodson and I so frequently had at Rush Medical College ten years ago. A certain university gave only the final standing of the migrating student, without stating that he had been conditioned or failed and subsequently passed. It did not give numerical grades but merely said "passed." We were led to suppose that such men were all right, whereas they had been weak students with repeated deficiencies. It was only after much disastrous experience that we learned the truth. In St. Louis I had similar experience with schools which gave credentials indicating the final standing but not the intermediate deficiencies of students. This practice seems to accord with the gold-plated rule, "Do others." The credentials should show every condition and failure whether removed or not. Every important faculty action should also be set down, such as required repetitions, demanded withdrawals, etc.

Should the receiving school be governed in its treatment of a student by the advice of the school from which he comes? Theoretically we may answer "yes"; but in my experience, the latter institution as a rule has little advice to give. It is usually glad to get rid of the man and does not care what becomes of him. There are of course exceptions; and in such cases the credentials and correspondence should be of great weight in deciding the action of the receiving institution. On the other hand, standards and methods vary; and I do not think a college has necessarily just cause for complaint if its emigrating student is received on different terms from those which it would itself impose on him.

An interesting case somewhat under this category has occupied the attention of Dr. Barlow, Dr. Means and myself this year. A student spent three years at the Los Angeles Division, University of California. He passed with good grades in all except three minor subjects. In these branches he failed to attend 80 per cent. of the exercises, as required by the college and the California statute. The faculty therefore ordered that he repeat the junior year.

This student came to St. Louis giving as his reason the fact that we have a summer school, and that he desired to make up his time deficiency by attending a summer session. In addition to credentials and letters establishing the above facts, he presented letters from the instructors in the branches mentioned, stating that he had done the work and had passed the examinations, but that these were not allowed to stand on account of deficiency in time requirements, as previously stated.

Our Council went over the case and voted that he should be admitted as a conditioned senior, with the understanding that he should take a summer course and, if all his work proved satisfactory, should be graduated at the close of the summer school. It was further provided that this action should be contingent on its approval by the dean of the Los Angeles Division, University of California.

I submitted the action to Dr. Barlow. He submitted it to the California Board and the Board submitted it to the Chairman of the Judicial Council of this Association. As a result our action was not approved, and we were obliged to classify the student as a junior.

Now I have nothing to say as to the disapproval of our action. I have no doubt the disapproval was founded on the state law and could not be avoided. What I do maintain is that so far as the good of that student was concerned, our action was justified by all the circumstances; and if there were any national body, similar to our school Council, clothed with power to consider the individual case and settle it on its merits, this young man would probably have been saved one year of valuable time.

It is of course easy to answer that the man knew the rule and should have governed his attendance accordingly. But from my point of view the rule is a device for securing proficiency. As a general thing it promotes proficiency and is therefore a good rule. But in this case it was not necessary, as the documents show. Justice to the individual therefore made it desirable that the rule be not enforced. You say this would create a bad precedent. I answer it would create a good precedent that, for good reasons, exception may be taken even to a good rule.

Dr. Means has asked me to comment also on the action of the instructors who gave the young man statements of having passed their courses subject to the time requirement above mentioned. As I do not know the conditions at the Los Angeles school, I think it would be unfair to express a specific opinion. In general it may, perhaps, be claimed as the just prerogative of an instructor to give to any student a statement of the work he has done and the proficiency attained while studying under that instructor. For administrative reasons, in schools hemmed in by legal restrictions like our medical schools, it is well that this prerogative be exercised with

caution. In our school it is a matter of custom that no grades be given out by the instructors. If any choose to do so, I should not complain. But it is clear that a grade so given does not constitute school credit, for that depends on other factors, such as registration, payment of fees and legal attendance.

SUMMARY

Migrating students have been divided into three classes. The good students who come from good schools should be accepted on the general principle of equivalence of discipline rather than exact parallelism of courses of study. Migration of this kind of students should be encouraged. Poor students from good schools, what Dr. Means calls "lame ducks," need very careful consideration and supervision. Their standing should be provisional and contingent on good work. Each case should be considered on its merits, and the student given a fair opportunity to redeem his record. But he must be held rigidly enough to test his ability and knowledge. It is not wise to take such students into the senior year.

The third class consists of students from inferior schools. It cannot be ascertained in advance whether they are capable or not, as the grades from many of these schools are of no value. These students likewise should not be taken into the senior year, but by two years of selected work, supplemented in many cases by summer school, many of them can be graduated on a par with the regular members of a class. These students are usually men who made a mistake in their original choice of a school and who are earnestly desirous of bettering their condition. Each student must be considered individually, and his credits and studies adjusted to meet his personal needs. Hard and fast rules cannot be followed, but certain principles find more or less general application. These are considered in the body of this paper.

For the adequate consideration of the individual student, whether in the matter of migration or any other phase of school life, a body of trained educators must be constituted with ample powers. It is recommended that this body be composed primarily of the paid, full time instructors. In most medical schools this would not be too large a number to be effective. This body should be free to use its judgment for the best interests of the individual student. Rules and precedents have their value for the regular progress of the student body, but must be considered a means and not an end. Justice to the individual is our fundamental duty. Broadly considered, just action for the individual carries with it justice to the other schools and to the public. We must beware lest in our blindness and in our sloth and in our pre-occupation we bow down to the wood and stone of rules and regulations. Let us set up rather the god of individual education, which is a spirit and not a formula; the spirit which so successfully

wrought in medical education in the days of preceptor and student; the spirit which has produced such apparent prodigies as Carl Witte and young Sidus; the spirit which makes an educational institution, not a machine nor a purely reflex organism, but a human entity with a human soul.

DISCUSSION

DR. WM. J. MEANS, Columbus, Ohio: To say that I have been immensely interested in the paper of Dr. Lyon would scarcely express my feelings. I know that the delegates present join with me in the very fullest and highest appreciation of the magnificent presentation that he has made of the migratory student, and also the principles that he has enunciated in our relation as educators to the migrating student. I had scarcely hoped when I started this correspondence with Dr. Lyon, with the State Board of California and some other colleges, that it would result in such a magnificent presentation of the subject as we have heard today, and I therefore wish to say that I am a thousand times repaid for the time that I devoted to the correspondence with these different organizations.

This subject was led up to by the correspondence he referred to in the last part of the paper. I held against the acceptance of the student by his school as a senior—that it was not only illegal and contrary to the laws of the state of California, but it was contrary to the maintenance of discipline among colleges in general.

The first position I held was that the St. Louis University had no right to give a student higher standing than that given by the student's own college, and the dean of the University of California had stated that this student should take his junior year over. In my judgment that is sufficient evidence for any college to turn down the request of a student for advanced standing.

In the second place, I held that the teachers had exercised a prerogative that was not their own in giving to this student statements that he had passed their branches, after the dean of the university had stated that no grades or standing would be furnished because of shortness in time.

In the third place, I held that this six-weeks' term mentioned by Dr. Lyon was not advertised, therefore not recognized for time credit; that it was a collateral course where students could remove subject conditions—an admirable method and one that I find very useful when organized properly. Where we have conditioned students in the Starling-Ohio College, for instance, who need summer work we probably recommend them to Rush or to our State University where they have an admirable course in the sciences.

This was the basis of the presentation of this subject that has led largely to this paper. I think I read a paper before the Teachers' Association in Ohio, not on the migrating student, but on colleges dealing with migrating students—rather from the college than the student standpoint. I assume that there the golden rule should obtain and I am glad Dr. Lyon has given it such prominence for I believe it should obtain in these cases.

I have found, however, as I presume you have, that the golden rule is not always observed by the migrating student, rearranging itself into "do unto them or they will do you."

The doctor, in closing, reverses his first very positive assertion. He believes in rules, knows their value, and would not have them done away with. I believe that Dr. Lyon believes in rules just as much as any of us, but in his eloquent way and with his great humor he has rather leaned to the sentimental side, not willingly, but unconsciously.

The migrating student is certainly a very interesting specimen of the genus homo, exceedingly interesting to us in our college relations, and, perhaps, you noticed how carefully the judicial council touched this subject this morning, and we hoped it might come up in the discussion here so that we might have more light on the subject.

I agree thoroughly with the Doctor on the migrating student from the doubtful school. Some of our brightest and most intelligent students spent their first years in low-grade schools. They recognized their trouble and tried to right it. We received them and shall receive more. They are good students and we are glad to have them. They have proven themselves to be thoroughly and well grounded along the lines Dr. Lyon has suggested.

As for the second class of students, the doubtful student from the good institution, I have nothing to say. I have sometimes wondered if the dean had not something to do with their coming to us. I remember once receiving a very beautiful letter from Dr. Dabney of the University of Cincinnati at the hand of a student whom he "had recommended to come to us and thought we could care for." I passed him along to the State University where he can spend the remainder of his days if he likes. I also remember another very nice young man who came to us from the University of Michigan. He spent the better part of two years with us. We passed him on! And so it goes. They come from good schools. We have, I think, half a dozen, more or less, in the first and second year that we would be perfectly willing to pass along to any college that wants more students, and yet we cannot say they are absolute failures. I think some of the brightest memories of my work are of the students we have had who in their first and second years with us were not good students. They were bright young men, but they seemed to bear no responsibility on their shoulders of their work. They were encouraged and helped along until they did well in their last years and have made good, strong men. That leads us back to the individual personal care that Dr. Lyon has spoken of.

When I see in our state universities at the end of a semester five or six hundred conditioned students (I remember noticing the records of one of our neighboring states, Wisconsin or Minnesota, I forget which, that had away up into the hundreds of conditions issued) I cannot help but feel "the poor boys."

In our own university (this is a little out of the line of the medical college but is still educational) I have known of many instances where men have been conditioned, and on inquiry have found it to be due to the personality of the teacher. At the end of the term they were examined and conditioned and they returned to their homes, many of them never to come back again. That is not right, and I wish to emphasize every point raised. Dr. Lyon and I do not differ on this class.

DR. REUBEN PETERSON, Ann Arbor, Mich.: I have frequently noticed in faculty meetings how the sympathies go out to the delinquent students. We like to give them a show. Then, when the discussion lags, someone of the faculty says "I move that the rule apply," and that seems to settle the student. So I am glad to hear a dean say that he would like to let the rule slip a little, or make it a little less applicable in certain cases.

I think that the spirit of what Dr. Lyon has said should commend itself to every one of us. After all, rules are only for organization purposes, to give us lines along which medical schools should be run, and we should consider individual students and do by them, individually, as well as we can.

At the Michigan University the cases of delinquent students are talked over at each faculty meeting, or whenever the subject comes up and they are given, I assure you, very prayerful consideration. When it is finally decided that a student should go, it seems to me that such a student ought to give chills up and down the spine of every class A medical school.

However, to me it is not so much the question of studies and the failure of these students in their studies that leads them to leave one medical school, as Dr. Lyon and Dr. Means have pointed out, but the fact that a student who is not progressing at one school may go to another and find himself.

What has troubled me is where students have been sent away from schools for lapses, not necessarily scholastic, and one hears discussed in the faculty meeting: this student stood very fairly in his classes, but dissipated, or has done other things, so they do not think he belongs to that school, and yet it is not right that the should be forced to give up his medical career.

Now, it seems to me, that is a delicate question. Our sympathies get the better of us. We do not want, as medical educators, to have these students who are morally delinquent go to some other school and graduate and become physicians. So I believe that every student who leaves for some such reason, if credentials are asked for, it should be distinctly stated why he leaves. You might say he should be given another chance in another school. I say it is too great a risk if he has had a fair chance in one school and made such a failure no other school had better run the risk.

DR. ALFRED L. GRAY, Richmond, Va.: There is another class of migrating student that gives us trouble. I have had some correspondence with Dr. Means and I should like Dr. Means and Dr. Lyon to solve this problem—the class who appeal to you for admission because, for some really good reason, they wish to change during the session the school of their first choice. While the climate of Richmond is not the climate of the sunny South, it is still not the climate of Maine, and I have in mind now a student who asked me if, for reasons of health he should withdraw from a Maine school, we would receive him.

Another instance occurs to me which came up the day I started to come to this meeting. I received a telegram from two students in an institution in the South, a member of this association, asking if I would matriculate them and give them credit for the year's work upon a statement of work completed at this other school.

Now there are two ways of handling them. While it is utterly impossible for us to know how any case has been dealt with in another school, still should we not admit students up to a certain time in our session, at least when they come from another member of our association and we can obtain a full statement of work done. In the case of these two students from whom I received the telegram I think I detected "a nigger in the woodpile" and gave just about as unsatisfactory a reply as they sent me originally. I should, however, like to have Dr. Lyon discuss the matter in closing.

While I am not in favor of many rules, a distinct understanding along this line would help us over difficulties very often. I have so far been applying what I deemed the construction of the golden rule in these cases.

Dr. JOHN M. DODSON, Chicago: There are just two points that I wish to make. One is the fact that medical schools do not deal fairly with each other in issuing to such students credentials setting forth their standing. I think it is better for schools to apply direct to each other for them, rather than have them come through the hands of the students. I mean by that anything bearing on the character of the scholastic work should be given. If he has been warned, disciplined, or conditioned in any way that also should appear plainly. The students will not like it, but it is the only fair, right thing to do.

Dr. Lyon has alluded to an unfortunate incident which occurred in our school and was the occasion of much trouble. I frequently say to students: I shall be glad to write a letter for you to any school you select recommending you to careful consideration, but I must tell the truth with regard to your record with us. The record must stand as it is, if it is correct. If it is not correct, we will gladly investigate any seeming errors and correct them, if necessary.

Fortunately, I have had more success than Dr. Lyon in getting letters from the faculty of other schools. A great many of the students who come to us are from schools whose instructors used to be with us and who are familiar with us and with our requirements, with our standing and our records, and they are able to give us the information we need. Such a letter as that is the very best possible method we have of valuating the student. They act, in a way, as examiners of the students for us. If such a man says, after examination, this student is weak in anatomy and should take more, that is the very best evidence we can have of what to do.

While such special information is not always sought from the dean, it comes from someone in the college who has been with us and who knows us and who can give it. Schools handling migrating students should know each other. I think it is a good thing for the dean to visit as many schools as he can. He can learn more during half an hour's visit at a school than he will ever know from perusing college announcements and curricula.

Then, there is another plan which with our summer quarter we find very advantageous. A course of study is selected to give a student a knowledge of certain branches in which he is weak. That plan was instituted many years ago and has proven of great value to our own students. Students can come to us during the summer quarter and we can determine before the fall term begins what his standing is, whereas if they come

to us at the beginning of a regular term we have no means of telling, except by the credentials he brings.

DR. EGBERT LEFEVRE, New York City: I wish to compliment Dr. Lyon on his paper and on his broad, human sympathy. We all have had and still have the migrating student. I have been on faculties and have met not only these students, but their families. Let us see the other side of this question. The college has a duty to the public and a duty to its other students. When students come to us without satisfactory credentials, what shall we do? If they go through one year and we find that they are absolutely unfitted for the study of medicine shall we not stop them, if we can, from pursuing a hopeless professional life? Then we have those who, on the other hand, are unfit morally. We should stop them absolutely.

I think, however, we should always consider the individuality of the student. The automatic rejection has been bad. No man is rejected automatically, but before he is accepted his standing for the year must meet with the approval of the dean. No other man can approve of it. That man must be reviewed with all the men present before he is rejected hopelessly.

Conditioned men are given a chance to make up their work before they go down automatically. We are liberal in first examinations and the students are given every chance.

Trouble has come to men who wish to repeat the course. I have advised men who wanted to repeat the course to go elsewhere. I think it is bad for a man whom we have conditioned when the curriculum is so inelastic that he cannot repeat the course in which he has failed and lead to the next year.

As medical schools we must come to the course method, whereby a man must have so many courses for graduation rather than to hold every man rigidly to six or eight weeks with no possibility for change. Some men could take eight years of one course that another would get through with in as many weeks. I hope that sometime we shall have a course system instead of a time system.

DR. H. A. CHRISTIAN, Boston: We have had considerable experience with all sorts of migrating students and there are two or three points coming out of our dealing with these men that I think may be of help to others. The first is that it seems to me important to explain to men coming for advanced standing the responsibility of the two years taken elsewhere, in so far as to meet the requirements of the state board lies with the school from which he comes. The school to which the man comes carries only the responsibility for the years with which he is with them. That explains the time incident.

We have found necessity for this explanation in instances which I will illustrate with one case. A man came to us from a university conducting a medical department and a collegiate department where it was possible for men to take certain years of collegiate work and then go into the medical department, and for the complete course receive a combination diploma. That man had actually done medical work for two years to the satisfaction of the men teaching medicine. We had accepted him, but doing so did not make this explanation. He went to another state (not Massachusetts) for registration. We gave him credentials for two years in medicine taken at Harvard and referred him to

the other institution for the preceding two years. They gave him credentials, but in looking it up discovered that for one-third of one year, although taking medical work, he was not registered in the medical department. That man had great difficulty in getting registered in the state to which he applied because he had not been registered for four full years in the study of medicine.

We have had many similar instances of the kind where the absolute rule of the state boards made it very hard for the man to register, so that we now say to each man who comes to us: If you apply for registration in any state we are not responsible for work in the other school, except as it is satisfactory to us. So far as your case appears on the surface we do not anticipate any trouble, but if trouble comes we are not responsible for it.

I think we have to be exceedingly careful in receiving these men or we shall get into trouble with the state examining boards. We should not accept students as having fulfilled the conditions of the institution to which we admit him unless we know they have had some preliminary training and could have fulfilled our requirements had they come to us in the first place.

Another point is the advisability of considering conditioned students. Let us say we accept a man to the second year, conditioned in anatomy. Is that right to the man? He is going to have a hard time anyway. He has the handicap of getting accustomed to new surroundings and work with which he is not familiar, new teachers, etc. Should we give him the additional handicap of a condition in some subject? I think not. I believe he should be entered for the full year or be advised to take the year over, not let him go on conditioned.

If you get him in the summer, he can remove the conditions. If you get him in the autumn and then expect him to come up to your own students he will come out at the end of the year pretty badly damaged. If he is weak in anatomy, but you think he has had enough physiology to make it up, all right, but do not pass him in conditioned. Either accept him to one year or the other.

I think the matter of conditions and the necessity for meeting these migratory students was one of the conditions that led to the adoption of the plan of examinations by which a man is examined before receiving his degree and by it he either passes or fails. If he passes he is entitled to begin the third year's work. If he cannot pass it, he must take the second year over. He is not entitled to take the first full examination until he has studied with us a year. For instance, if he comes in at the beginning of the second year he has a full year before him before he faces his first general examination. He has his work accepted on the standing he had at the other college, or he is required to pass the practical examination, but in either event, before he comes to the first general examination he has passed his practical examination. He might be able to postpone the practical examination in anatomy until the end of the year, if he wishes, but before he comes up for the general examination he must have passed the practical examination.

In that way we can allow considerable latitude in examining and we are responsible only for the time during which we have had him in charge.

DR. LYON (closing the discussion): I was a little surprised that Dr. Means assumed that the central thought in my paper was sentiment. I deny that I mixed my ink with too much feeling for the student. When I said that these things should be adjusted by principle rather than by rule I was not saying that principles are not as cold as rules. I said that the principles could be decided after all the facts of the case were before you. It is a pretty psychologic problem, anyway you put it. I do not, however, believe that the student's feelings should be given very decided weight in considering the matter. I wish to disclaim the idea that careful consideration of the student's feelings had anything to do with the central thought of my paper.

Answering the question (from the standpoint of my own sentiment, of course) of Dr. Peterson, should a student, dropped for dissipation, ever be received anywhere else. If the dissipation is mental and congenital, lack of character (if there is such a thing), I should be inclined to agree with him, but dissipation is in many instances a matter of environment. In Germany first and second year students are expected to do almost anything but to study, and then after that they get down to business. I am not sure but that America might not have something the same condition. Give them a chance.

As to changing of schools during sessions: I cannot see any objection to that. Repeatedly I have given to state boards records of attendance for three semesters, or five semesters. If there is a good reason for the change I do not see any objection.

Furthermore, I want to apply my principles even to Dr. Christian. He says students should not be taken into the third year with a handicap. Well, acknowledge that he is seriously handicapped, and that everyone cannot run with a handicap, still I am willing to let him go. That is just the point I am trying to bring out. There should be good judges of the race and good judges of the handicap. Sometimes it is too heavy, sometimes it is not. Sometimes a can can take a handicap and do very well. If he can, I say, "let him hand it."

I sum it all up by saying: Consider the individual. Get all the facts about him, and then the question of what to do about him is just a matter of human judgment. We all make mistakes, but the more you study your students the fewer mistakes you will make and the less frequently you will make them. And it is a great deal more gratifying than to apply one single rule to all.

THE ADDITION OF A FIFTH YEAR TO THE MEDICAL CURRICULUM

JOHN M. DODSON, M.D.

CHICAGO

The remarkable advance in medical education in the last quarter century has concerned both the kind and the amount of the training demanded of the medical student. Laboratory and practical courses, in which the students, in small groups, are brought into immediate contact with the materials to be studied, and thus obtain knowledge at first hand, have largely supplanted the didactic lecture and recitation, especially in the fundamental branches.

Unfortunately the introduction of similar methods—of objective teaching—in the clinical subjects has made little progress, excepting in a few schools, and the lamentable deficiency of our medical students in practical experience at the bedside, is keenly realized. How serious and deplorable is this deficiency has been graphically set forth by Mr. Flexner of the Carnegie Foundation in his Report on Medical Education.

The amount of education demanded has been increased at two points—the extent of preparation exacted for admission to the medical school, and the length of time required to be spent therein. As the successive steps in advance have been taken, the decision as to where the increase should be made has not always been wise. When, for example, about fifteen years ago, a general increase was made in the curriculum from three to four annual sessions, it would have been better, if, in lieu of this, the advance had been in the premedical requirement, this requirement being at that time, in most schools, about two years of high school work, rather loosely enforced. Much more would have been accomplished in the direction of elevating the standards of the medical profession, had the emphasis been placed at that time on a fairly adequate preparation for medical study.

Fortunately, in the last five or six years, rapid progress has been made in this direction, and, with about thirty medical colleges now exacting two years of college work for admission, with three of the State Boards of Medical Examiners demanding the same as a prerequisite for licensure, it seems pretty certain that this will be the uniform standard of the medical schools, in the northern states at least, within the next decade.

With the present conditions in most of the secondary schools, and while so large a proportion of students enter college at 21 or older, and the medical school at 24 or later, it seems unwise to

contemplate any further advance in the requirements for admission to the medical schools, as a universal standard, in the near future. Nothing less than this, however, will suffice to give the student adequate preparation for the study of medicine under existing conditions. One year of college work is not enough to afford the requisite training in English, mathematics, physics, chemistry, biology and foreign language, notwithstanding the fact that the Council on Medical Education of the American Medical Association has recommended such a curriculum of one year.

If the premedical curriculum may be regarded as satisfactorily determined for the present, the next step in advance in medical education, at once, the most needed, and under the right conditions the most feasible, is the addition of a fifth or practical year to the present course of study, this year to consist of service as an interne in a hospital, under supervision of the faculty, or in exceptional cases, for those who look forward to a career of teaching and investigation, of advanced and research work in one or more departments of the college. This fifth year should precede the conferring of the degree.

The feeling is universal among medical educators that medical graduates are entering into practice with two meagre first-hand knowledge of disease—such knowledge as can only be gained by actual experience, at the bedside under careful supervision. In the earlier years of medical education in the United States, such experience was secured by an apprenticeship with a preceptor. This, indeed, constituted the sole means of preparation of a considerable proportion of medical practitioners until well after the middle of the last century. For the remainder, the one or two sessions of medical lectures—of four or five months each—was the incidental rather than the chief part of their training.

The rapid development and growing importance of the fundamental medical sciences, led to a steady increase in the amount of time required of the student in the college, while the changing conditions and methods of practice made it more and more difficult for the preceptor to give his student-apprentice effective instruction, and so his function in the training of the student became gradually less, and the title of preceptor merely nominal.

The passing of the preceptor, and of the excellent practical training which the student received at his hands was a real loss in medical education, but one which seems to have been inevitable. Meanwhile the opportunities for practical experience in the hospital have enormously increased. The hospital idea has grown rapidly. The public is becoming educated to the fact that the hospital is the best and most economical place for the sick, medical, surgical or obstetrical. Few cities of 15,000 or more inhabitants are to-day without one or more hospitals.

I have sought to ascertain the number of hospitals, and of hospital beds in the United States which do, or which should admit interns, and afford them reasonably good opportunities for practical experience. The data at hand are very imperfect, but taking the figures from the last edition (1909) of the Medical Directory, published by the American Medical Association, it may be conservatively estimated that there are seven hundred hospitals, each of fifty beds or more, containing an aggregate of over 90,000 beds. These are general hospitals, and exclusive of sanitariums, or purely private institutions, and of hospitals devoted to special classes of cases, such as those for the insane, the tubercular and the county infirmaries.

Of these general hospitals about sixty-four, with 10,000 beds, are already more or less completely controlled by the medical schools—about 3,000 hospitals, with about 45,000 beds, are located in cities where medical schools are situated, but are not operated or controlled by these schools, and finally, about 320 hospitals, with approximately 35,000 beds, more or less distantly removed from any medical school. Each one of these institutions needs an intern for every 25 beds. Even with our present excessive output of medical graduates each year (at least 50 per cent. in excess of the needs of the country), there should be a vacant internship awaiting every graduate in medicine.

Several of the stronger medical schools report that for the last four or five years, not only has every graduate from these schools been able to secure an internship in a good hospital, but that the demand for their graduates to fill such positions has exceeded the supply.

In 1906 one medical school added a fifth year to its curriculum, made optional and leading to a *cum laude* degree. Five other schools have since added a fifth year as an optional addition to the course of study, and one, the Medical Department of the University of Minnesota, now requires this year for graduation. In Germany a practical year has recently been made compulsory and a similar requirement obtains in Great Britain and France. The uniform adoption of a curriculum extending over this hospital year is recommended by the Council on Education of the American Medical Association. Is it feasible? If so, what steps are necessary to put it into operation? What regulations should be prescribed in reference to it?

The plan is desirable and practical for the school which is prepared for it and which can secure the necessary hospital connections and control to insure a place, under the right conditions, for all of its students during this intern year. A serious mistake will be made, however, by any medical college which rushes into the scheme hurriedly, just because the idea is "in the air" unless it is able to meet these essentials.

In the first place, no school should add a compulsory fifth year, until its entrance requirements have been made equal to those now demanded by the conditions of the time as exemplified by the twenty-nine colleges now exacting two years of college work beyond the high school. One year is not sufficient and especially will any attempt on the part of the detached medical school to give instruction in the required physics, chemistry, biology and modern language, be a serious step backward.

The necessity of securing the proper connection with hospitals involves the large question of the relation of the medical school and the hospital, quite the most vital question to-day in medical education in the United States. What should that relation be?

It goes without saying that the dispensary and hospital constitute the laboratories for the clinical branches, as do the dissecting room for anatomy, the morgue for pathology, and the laboratories of physiology, biologic chemistry, pharmacology, histology, embryology and bacteriology for these several sciences. Mr. Flexner says in his report in reference to control and utilization of the hospital for teaching and research, that the medical school should bear exactly the same relation to the hospital as it bears to these other laboratories. It is obvious, however, that there are very important differences from the nature of the case.

The dissecting room, the morgue, and the other fundamental laboratories, serve exclusively the purposes of investigation and teaching. There are practically no limitations on the use of their materials for these purposes. The hospital is primarily a place for the care and cure of the sick. Whatever other purposes it may serve, its use therefore, must always be conditioned on, and subordinate to that one vital fact—the welfare of the patients. No use of these patients for any purpose, can for an instant be tolerated which is in any degree, prejudicial to their welfare, entails unnecessary suffering or delays their restoration to health. Moreover, in the long run, it is in the best interest of science, as well as humanity, that no patient should be used as a clinical subject against his will. The use of a pauper patient against his will, for instruction or investigation on the theory that he in this way, makes return for his free treatment, is wrong in principle and pernicious in practice.

On the other hand, it is seldom difficult for the tactful, kind physician to secure the consent of a patient, rich or pauper, to serve as a clinical subject.

While the use of the sick for purposes of investigation and instruction must ever be subordinated to their welfare, when conducted under suitable regulations and supervision, such use is not only not inimical to the patient, but decidedly in his best interest.

The hospitals where complete and accurate clinical histories are written, where thorough diagnostic methods are carried out by modern methods, in a well-equipped pathologic laboratory, are

almost without exception, hospitals under the control of a high-grade medical school and in which instruction and research are daily carried on. On this point there is unanimity of opinion by all who are most competent to speak.

Says Dr. Keen: "I speak after an experience of forty years as surgeon to a half-dozen hospitals, and can confidently say that I have never known a single patient injured, or his chances of recovery lessened by such teaching. Moreover, who will be most slovenly and careless in his duties, he who prescribes in the solitude of the sick-chamber, and operates with two or three assistants only, or he whose every movement is watched by hundreds of eyes alert to detect any false step? I always felt at the Jefferson Hospital as if I were on the run with a pack of lively dogs at my heels."

Miss Baefield, after an ample experience as nurse and patients, speaks as follows: "As a matter of fact, in a properly administered hospital, medical schools are a protection to the patient rather than otherwise, for it usually means that the hospital is a very live one. In teaching hospitals I think that on the whole patients are generally better nursed, for everyone is kept up to the mark, including the professors."

And the committee appointed in 1905 to inquire into the financial relations between the hospitals and the medical schools in London say, "We find that the pressure of a body of eager young men watching the proceedings of their teacher has a tendency to keep the medical men on the alert and to counteract the effects of the daily routine of their duties."

Indeed, the hospital needs association with the medical school quite as much as the college needs the clinical material of the hospital. Hospital boards are beginning to realize this, and some significant demonstrations of this awakening are of recent occurrence.

About three years ago the board of directors of a children's hospital, which had been in existence several years, voluntarily sought and entered into affiliation with the faculty of a medical school which had for several years controlled another hospital to the mutual satisfaction and advantage of all concerned. The Board asked the faculty of the college to assume entire responsibility for the medical conduct of the hospital; the existing medical staff resigned, and the faculty was given full power to nominate a new staff, which, by the special request of the board, was to include no physician who was not a member of the faculty; clinical instruction and research to be conducted in the wards as directed by the faculty.

Within a year another institution has voluntarily sought and secured a similar relation to the same college. These facts are, to my mind, a pretty certain indication of the trend of the times in reference to the relation of existing hospitals and medical schools in some of the cities of the United States. And it does

not offer a more satisfactory and feasible solution of the needs of the medical school for clinical material than does the proposition that the medical school must own and maintain its own hospital.

The hospital being primarily an institution for the care and cure of the sick, its maintenance is not properly a function of the medical school, whose business is specifically educational, including research. In most instances the medical school has come into existence to find the surrounding community already abundantly supplied with hospitals, the evidence of which is furnished by the fact that these hospitals are much of the time clamoring for patients to fill empty beds. True, the conditions in these institutions are usually far from satisfactory, but even so, shall the medical college duplicate hospital accommodations already equal to or in excess of the demands of the community, at enormous expense for construction and endowment, or shall it seek to establish the right relations, and secure the necessary control of existing institutions, which control, as has been pointed out, would be to the great advantage of both hospital and school?

The great medical schools of European countries, where the control of clinical material is most satisfactory and where the best scientific work has been done, do not, as a rule, own and maintain hospitals. They use the great municipal or state hospitals maintained by the city or state. The corresponding hospitals in our own country, the management of which, tainted by ward politics, has been up to the present time so unsatisfactory from every point of view, nevertheless contain, and will continue to command the best possible clinical material, such as no non-public institution can hope to duplicate.

England offers to this rule a few exceptions, as a number of the English medical schools are connected with hospitals, but in these cases the hospital preceded the medical school, often by many years, and the medical school has grown up as an adjunct thereto.

In those rare instances where a large provision has been made for research, either in the medical school, or in an institution devoted solely to scientific investigation there is advantage in having a relatively small hospital, liberally endowed, in which can be collected groups of cases of this or that disease, primarily for the purpose of an exhaustive and protracted study. Into such institutions patients enter with the express understanding that they are to be made the subjects of investigation—not of course to their detriment. Here the purpose of investigation supplants the care and cure of the sick as the primary motive, and the burden of maintenance falls properly on the endowment for research.

It seems to me, therefore, that even for the purpose of securing clinical material for the necessary instruction in the junior and senior years of the present curriculum, the medical school, with rare exceptions, must find it through affiliation with existing or to-

be-established hospitals, on a pecuniary foundation distinct from that of the medical school itself, and with persistent and intelligent effort, I believe this can be done.

When it comes to the question of finding places for all of its students in their fifth or intern year, there can be no question about which course the college must pursue. No one, surely, would contemplate the possibility of a medical college undertaking the ownership and maintenance of a hospital of such magnitude as to supply internships to all of its graduates. To supply places for all of its students the students must find places as they are now doing, in detached hospitals in the cities where the colleges are located, as well as in other cities, more or less distantly removed from the medical schools.

It is, of course, not possible, nor is it necessary that the medical school should have the same degree of control over the hospital for this purpose as is indispensable for the clinical work of the earlier years, and for the conduct of research by faculty and students. Certain things it must insist on, however, if this fifth year is to be of the largest possible value to the student. The mere securing of an internship in a nondescript hospital, in the perfunctory manner in which it is so often done does not suffice.

The hospital must have or, not having, must institute a good system of clinical records that the intern may write accurate and thorough case histories.

It must have a well-equipped clinical laboratory convenient to the wards, where he may make the necessary examinations of urine, blood, sputum, etc., examine blood cultures, and carry out, in short, all of the approved modern methods of laboratory diagnosis.

Some one or more members of the staff must be able and willing to supervise closely the work of the intern, correct his mistakes and give him needed instruction in the details of the practice of medicine which he has not yet mastered. These members of the staff will cooperate most cordially and effectively with the faculty if they are made members-extramural of the faculty of the school. They should attend faculty meetings as often as possible, and should feel themselves to be an organic part of the teaching body.

It will, of course, be of great advantage if the hospital has a school for nurses and conducts the nursing work of the institution along approved modern lines. It will greatly enhance the quality of the service rendered by the hospital to its interns, and not less to its patients, if it has a trained, salaried pathologist who gives all or most of his time to the work of the hospital, and who is doing original investigation, as also other members of the staff. In time all of these things must be insisted on, but for the present trained nursing and research work are unknown in so many otherwise acceptable hospitals that their general introduction can only be secured in the course of time.

The regulations prescribed by the faculty for the intern should be such as to insure that this hospital year be of the largest possible educational value to the student. The rules drawn up by the faculty of Rush Medical College in 1905, were set forth in a circular announcing the installation of the fifth year leading to the *cum laude* degree. As this announcement may not be without interest in this connection, I quote it in full:

FIFTH YEAR

Beginning with the session of 1905-6 a fifth year is added to the curriculum, which, for the present, will be optional. The work of this year will be that of

- A. Graduate work in one of the departments of the college; or
- B. An internship in a hospital.

On the successful completion of this fifth year he will receive the degree of Doctor of Medicine *cum laude*.

- A. The year of graduate work may be taken either (1) in a fellowship, by students who may be appointed to such positions; or (2) as a graduate student.

In either case the candidate must be in residence at least three quarters and complete the equivalent of seven majors of work in some one department, or of nine majors in three or more departments, and present a satisfactory thesis. The candidate must be recommended to the faculty as entitled to the degree by the department in which the graduate work has been done.

- B. Fifth year in an internship.

CANDIDATE.—1. Every student wishing to take the fifth year as an intern shall announce his intention in writing to the dean of medical students before the last term of the quarter in which he expects to graduate.

2. The internship may be procured by competitive examination or by appointment.

3. Each candidate shall, during his service, be under the frequent and close supervision of a member of the faculty, to be designated as hereinafter provided.

4. He shall make report to this supervising member of the work he is doing, at least once a month. Such report shall state the number and nature of the cases he has had under his care during the month, and the number of days (if any) that he has been absent from his work, and for what cause.

5. At the end of his year of service he shall submit to his faculty supervisor copies of the complete original histories of at least ten (10) of the cases that have been under his care, and which were written by him, the patients' names to be omitted. These

shall be submitted to the committee of examinations for the *cum laude* degree.

6. At the end of his term of service either (a) he shall present a typewritten thesis embodying the thorough study of a case or group of cases, including their thorough examination by modern clinical tests, which must be satisfactory to the committee; or (b) he shall pass an oral and practical examination before the committee at a time and place to be designated by the committee.

7. He shall be present at the commencement when the degree is conferred; no degree is conferred *in absentia*.

FACULTY SUPERVISION.—1. During the winter quarter of each year the president of the university, the dean of the faculty, and the dean of students, as a committee, shall designate

(a) A committee on examination for the *cum laude* degree consisting of five (5) of the faculty members, selected from at least five (5) of the clinical departments (medicine, surgery and obstetrics to be always represented), who shall serve for the college year, beginning with the succeeding summer quarter; and

(b) Such number of supervisors as can most conveniently take charge of the work of the candidates for the ensuing year, for the *cum laude* degree by internships. No faculty supervisor shall have charge of more than five (5) candidates.

2. The interns to be thus supervised shall be assigned to the faculty supervisors by the committee on examinations for the *cum laude* degree, as above provided for.

3. It shall be the duty of the faculty supervisor

(a) To direct and advise the interns under his charge as to the conduct of their work, to the end that it may be of the greatest possible educational value to him or them. Such advice must be so given as in no way to conflict with the desires and authority of the staff of the hospital in which the intern is serving.

(b) He shall receive from the intern a monthly report of his work.

(c) He shall visit, in person, the hospital or hospitals in which the candidates under his supervision are serving, and acquaint himself thoroughly with the physicians of the staff (especially as to their ability and efficiency), with the equipment, and the character of its service.

(d) Before the close of the year he shall, with the approval and consent of the staff of the hospital, select from the history sheets written in regular daily routine by the candidates under his charge, twenty (20) histories taken at random, and shall examine the same carefully.

(e) He shall make inquiry of the attending staff as to whether or not the service of the intern has been satisfactory, and make a report to the committee when the candidate under his charge has completed the necessary period of service, as to the manner in which he performed his duties—whether satisfactorily or otherwise—accompanied by his recommendation as to whether or not the candidate should be given the *cum laude* degree.

HOSPITALS.—1. The hospitals in which service as an intern may be considered acceptable for the *cum laude* degree shall be selected by the committee on relations with other institutions, and be approved by the faculty.

2. Such hospitals shall have at least twenty (20) beds.

3. The officials of the hospital shall be notified that such and such persons, whom they have selected as interns, are to perform their services also as candidates for the *cum laude* degree, and the assent of the officials to the arrangement must be secured before the service is entered upon.

4. There must be on the staff of such hospital at least one physician who is a member of the faculty of Rush Medical College—either intra- or extra-mural—unless exception is made by the vote of the faculty.

5. A list of the hospitals approved by the faculty shall be kept in the hands of the deans, who will advise inquiring students whether any particular hospital is or is not included in the list.

The requirements imposed by these rules were not unreasonable for a *cum laude* degree which, it was planned, should be the equivalent of the master's degree (A.M. or M.S.) conferred by a college or university for one year of graduate work. I am inclined to think that they are somewhat too rigid an exaction, at least in the beginning, for a fifth year which is made a pre-requisite for the degree of M.D., and, therefore, for licensure to practice medicine.

The amount of routine work now demanded of the intern in many hospitals so consumes his time as to make it very difficult and often impossible for any but the exceptional student to prepare a thesis. This ought not, however, so to be. The intern should have time to study the cases assigned to him thoroughly and carefully, and also pursue exhaustively the study of some disease or condition as presented by some interesting case, or group of cases—to explore the literature relating to that topic, and to set down in orderly fashion the results of his investigation. No instruction or experience in his career as a student of medicine is so potent an educational measure as this one of independent creative work.

As previously indicated, I believe it is possible to extend this plan of cooperation and affiliation to hospitals located in cities more or less remote from the medical school. In such case, also the members of the hospital staffs selected to supervise the work of the intern should be made extra-mural members of the faculty of the school.

Needless to say, no such appointments should be made of physicians simply because they are members of the staff of the hospital. They must be carefully chosen because of their known ability and willingness to instruct the student, and to carefully direct his work, and no hospital should be affiliated unless there are such persons on its medical staff. In most of the smaller cities such men are to be found, fundamentally as capable of high grade work, in practice, teaching and research, as are many of the members of the intra-mural faculty.

These men would find in an intimate, vital connection with the medical school, and in the work of instructing students, an inspiration and stimulus that would be to their advantage, and that they would keenly appreciate. They should visit the medical school from time to time, attend an occasional faculty meeting, and become acquainted with its ideals and methods. Their connection with the school should be recognized by the appearance of their names and titles in its bulletins or announcements.

There is no inherent difficulty in the plan of having two or three schools associated with the same hospital, interns from each working side by side, as they do at present, in some of the larger hospitals, each intern under the supervision of some member of the staff who owes allegiance to the school from which the intern comes, and from which he is to receive his degree. Indeed, there are important advantages in having interns from two or more schools working side by side in the same hospital, with a common purpose, but stimulating and broadening each other's views and knowledge by the diversity of their previous education.

In these hospitals students in the earlier stages of the medical curriculum—that is in the long vacations succeeding the sophomore and junior years—could, with advantage to the hospital, as well as to themselves, serve as externs, performing the simpler duties in the wards and laboratories under the supervision of the staff and the older interns. These long, four to six months vacations, under the custom which has prevailed since the preceptor became obsolete, are a sad waste of time and inertia.

Under the four quarter system in Rush Medical College, the students may, if they choose, continue in residence about ten and one-half months each year. In my observation of many students who have pursued this plan during the last twelve years, I have yet to learn of one who has been harmed physically, or otherwise,

by continuous work during the four quarters of one or more years of his course of study.

The division of expense between the hospitals and any college with which it is affiliated should not be difficult of adjustment. The hospital, as a place for the care and cure of the sick, should bear the expense of its maintenance for that purpose. The medical school, as an educational institution, must meet any additional expense entailed by the use of the patients for teaching or research, over and above that which would be required to give the best possible service to the patient in the effort to restore him to health.

By no sort of logical reasoning can it be concluded that it is a just obligation of the college to pay for free beds because the patients occupying them are used for clinical demonstration. It is the function of a charitable hospital to maintain as many free beds—free wholly or in part—as its income will permit. The hospital, as an institution, is entitled to credit for benevolence just to the proportion to the amount which it expends on the hospital's care of its patients over and above that which they pay for such service. Credit for free medical service rendered belongs to the medical staff of the hospital and to the college furnishing the staff, not to the hospital as such.

The staff should utilize as clinical material any and every patient in the hospital, be he pauper or pay patient, who does not object to being so utilized. Of course, the interests of the medical school and every affiliated hospital are mutual; both are engaged in rendering service to the sick, and each should assist the other in friendly cooperation to secure the necessary endowments to carry on their work.

I am not unmindful of the difficulties to be encountered in securing the effective cooperation of hospitals and medical schools along the lines suggested. Local jealousies among practitioners, keen rivalry between neighboring medical schools, parsimonious economy on the part of hospital boards, "ward politics" which dominate the control of many public hospitals, the lack of adequate endowment for both medical school and hospital, these and other hindrances to good work by both groups of institutions and, therefore, to effective cooperation, must be met and overcome.

It is because of the magnitude of these difficulties that great care and deliberation is necessary on the part of any medical school which proposes to make a fifth or intern year a compulsory addition to its curriculum. The diploma issued by any medical school should stand for thorough, careful education at every stage of the required course of study, and it should not be made to cover a fifth or intern year until the school can give to the student and to the world assurance of the same effective instruction, closely supervised under proper conditions, during this fifth year that is given during the preceding years of the curriculum.

DISCUSSION

DR. ARTHUR DEAN BLVAN, Chicago: I have been very much impressed with the necessity for introducing into the college curriculum, as an integral part of the curriculum, this intern year for this reason: I have found that in teaching surgery the time at your disposal is altogether too limited. For instance (and bringing this discussion down to my own experience), we have in the third and fourth years something less than six hundred hours to teach the students modern surgery in all its branches. Now, in dividing that six hundred hours the different courses that I find absolutely essential take up almost all of that six hundred hours (by actual count five hundred and forty hours).

We feel that it is essential to give our men a thorough course in surgical anatomy, in surgical pathology. We feel that it is essential to give them a thorough course in operative surgery on the cadaver and on animals. We feel that it is essential to give them a certain amount of dispensary work. We feel that it is essential to instruct them in clinics and in conferences in general regional surgery. We feel that it is essential to give them a thorough course in anesthetizing and as much as we possibly can in the way of small class instruction groups in hospitals.

Now, gentlemen, when you add these courses all together, even though you are thrifty in saving your time, there is very little left of your six hundred hours—so little that the amount of actual hospital instruction that you can give is not enough to round out the students' course. It is a very small amount of hospital work that can be given, even if you have small classes and absolute control of your hospital and all the material and facilities you can ask for.

With the time at the disposal of your students and the facilities for teaching it is absolutely impossible, to my mind, and at least in surgery, to give the student anything like a thorough clinical course in the time allowed. In other words, it is essential to add this hospital year.

Not only that, but I want to add this: In modern surgery, in the proper handling of surgical cases in hospitals, you cannot have students indiscriminately handling the cases. What can I do with a case of general peritonitis in allowing my students to handle the case? What can I do with a compound fracture of the leg in permitting the students to handle it? What can I do with the thousand and one things in so far as permitting a senior student to handle the case.

It is not quite the same in medical work because, I grant you, there are many cases that can be handled without detriment to the patient. It is not so in surgery. We do not change a dressing but once in eight or ten days and then under the most careful conditions to see that it is absolutely clean and that there is no possible source of contamination.

So, as you look at it, the only time we can have the student do the actual work of surgery is when he is part of a machine that is giving the patient medical and surgical attention and that is the time when he is an intern in the hospital.

I believe, then, that we are absolutely confronted with the necessity for making this intern year an integral part of the course, and, gentlemen, the student of good caliber has already done this before us. In our own school every man has had an internship, with the exception of two or three who for good reasons have not served. The medical student has himself seen the necessity for it.

Dr. B. D. MYERS, Bloomington, Ind.: It is, perhaps, unnecessary for me to state that three years ago in Indianapolis we established the fifth year. The first year we had no applicants for the degree to which this entitled them. Last year there were six who completed the work for the degree. This year twenty are candidates for the degree, seventeen out of a list of fifty graduates and three out of the preceding year's class.

Now there is something further in this optional fifth year, gentlemen, than a mere hospital year, as I am sure every institution that tries it will find. That is the completion of an original thesis involving some original work. It is wonderful how many, many students start out with the very good intention of completing this and then it is never done. We have had to come to it and we have come to it gradually.

The second proposition is this: These young men were going out into different parts of the states to establish themselves as professional gentlemen, to take their place among the older practitioners and they felt that they should know something about how to go about the preparation of a credible medical paper, and we felt that if they learned but that one useful thing the hospital year was a good thing.

The first year they were not much interested in it, but lately we have made something of a feature of it at graduation. We insisted upon the rewriting of some of the theses and some were later published in a medical journal and that was appreciated by the men and they evidently look upon it as something to attain and this year there are twenty who are studying for it.

Dr. F. F. WESBROOK, Minneapolis: Last year I presented a paper here with reference to the action Minnesota had taken and asked for the experience of others who had instituted this fifth year. I was firmly fixed in my conviction that the fifth clinical year should be taken, and I remember someone asking me (I believe it was Dr. Christian) if I did not think it would be just as well to add a year of laboratory work, instead, for those who were to teach. I expressed it as my opinion that this was not desirable—that all should take the hospital work.

I have to report now that I have been converted to Dr. Christian's viewpoint, if it was such, and that I do think that a year of laboratory work for those who are to teach, or specialize in this branch might well be substituted for the hospital year.

I think that of the graduates of Minnesota about 80 per cent. became general practitioners of medicine and about 20 per cent. teachers or research men. Perhaps some of the general practice men will, later, become research men, but after graduation I think the division is about in these proportions. I think every hospital and every community owes it to themselves to take the very best possible care of the patient of today and put them in training for the life-insurance of the patients of tomorrow and no one is doing his duty who does not train men to take care of his children and his children's children. I think that in the future we will build our hospitals to benefit the future as well as the present generation and I believe we shall have a good many endowed universities, hospitals and schools, because if we appeal to people of a community who have the means, they will see the necessity for the provision for the sick and injured in the years to come.

As President Craighead said: If he is able so clearly to foresee getting together large endowments for hospitals and colleges, why cannot

we have a little of his optimism and see what he sees, and it is very possible for us to do this if we do our full duty. We all of us can see the light that led the English to build their schools around the hospitals.

In Minnesota we now have our hospital in connection with the college (it was opened in September and already we have a waiting list) and we expect to appeal to people interested not only in educational work, but in charity of the highest type. I think we can appeal to them along this line of taking care of the children, as yet unborn, and giving our children a better chance, even, than we have had.

Now, I can see certain difficulties in the whole situation. I am encouraged, however, by the fact that the Council on Medical Education, in a paper presented by Dr. Peterson, and Dr. Dodson today presented an outline of a plan whereby we may get at this. We, however, owing to the fact that we did not publish the requirement, have to wait two years before we can enforce our hospital requirement.

This other idea of the exchange of alumni appeals to me as a method whereby a student's experience may be broadened and his learning improved but I see very great and practical difficulties in the way of applying this year wisely at any very great distance from home. We have established very friendly relations with our municipally controlled institutions, and the managers are much interested in the plans, but they represent the municipality and we represent the state and so there are no complications. But, suppose we entered into relationship, for instance, with New Orleans. It would be an exceedingly hard matter for Dr. Dyer to examine these students, even after the matter of the expense of getting the students down there had been disposed of. But, on the other hand, if we could arrange with some member of the faculty of Tulane, for instance, to have supervision over these students, reporting back to our faculty, even this difficulty could be overcome and I have no doubt but that Dr. Dodson has thought of this, and I have only spoken of this extreme case as pointing out one difficulty.

I am much interested in this whole subject, and think it absolutely necessary that we have this practical year, and I furthermore hope that a system of checking the work of these students will be devised. We have already, during our stay here, been struck forcibly with the inadequacy of our examinations by our teaching system. It is going to be just as difficult, if you do not get some good method, of putting a check on these students as well as to have something to show to other students, to handle this branch of study. They are going to have advantages that will be well worth their while. I think the mutual side of this requirement must be fully understood. I should not wish to put my senior students into an institution which would be practically in control of one year of that student's training with no check at all on what he was able to do, so that if the institution were erroneously led to the conclusion that the student was not fitted for the work they could lose to him from two to any number of months of his work. That would be delegating to an outsider more power than we would want to give to any teacher.

That was a practical difficulty I had in mind in placing students in remote institutions. It will require very careful study and thorough understanding between student and faculty. These are points not insurmountable but we have not been compelled to meet them yet in Minnesota and I hope it will not be necessary for us to do so. I should like to see the

time come when we may exchange students for the benefit of the colleges themselves, to prevent their becoming narrow and for the benefit of the alumni.

DR. REUBEN PETERSON, Ann Arbor: I wish to commend Dr. Dodson's paper. It seems to me he has given a good presentation of some of the questions we had before us yesterday. We must go at this very carefully. Dr. Dodson handed me a copy of "The Fifth Year," a pamphlet gotten out by Rush College. While I have not read it carefully, it occupies some three pages outlining what the student will have to do to receive the degree of *cum laude*. Dr. Dodson tells us that only one student has complied with the requirements. This shows that this must not be a paper campaign. It must be something in which we must move exceedingly slow, not something that we work out in our study.

The first thing we should do is to find out the actual conditions confronting us, have a personal inspection made of what these hospitals are doing in the way of instructing interns. After we have these facts in our possession, then we can take up with the various bodies having control of these institutions means to improve conditions.

If you start out with a paper plan and say to hospitals, you must comply with these terms in order to affiliate with us, you will create antagonism, but if you get acquainted with the hospital and say to them: I do not believe you are giving our students the kind of opportunity they should have, and suggest to them certain improvements in what they are doing, much can be accomplished.

I believe we are leaping ahead too fast. We must remember, as Dr. Bevan has so well said, and as I tried to say in my paper, that the student has already tried to solve this problem for himself, but did not have it in his power. The minute one intern or several men tried to improve conditions in the hospital they were suppressed and did not get very far.

Since I have been at this meeting I have found that some hospitals thought that their position was impregnable, but have recently had to go out and ask for interns. I know of one where I would have given anything in the world to have secured a position as intern. It was a very desirable position. Even that hospital has found that it has been obliged to ask for interns. That lesson is going to be very salutary to that hospital. So it will go all along the line.

Hospitals are multiplying. Large institutions that have treated the question of intern service haughtily are finding that students are not applying to them. It can be handled along these lines and I believe handled very well.

I think we had better be careful about degrees and affiliations with hospitals. If we place hospital chiefs or clinicians on our medical school faculties we may possibly make a good many mistakes; but if we go carefully and find out the true condition of the hospital and then put them into Class B if they are not all that we think they should be, they will look to see what hospitals are in Class A and strive to get into that class. We can then submit to them workable plans for the work of interns and it will enable us to accomplish much.

DR. J. M. DODSON (closing the discussion): I will simply summarize by saying, we should go to work deliberately and no school should undertake to require of the student things which it is not able to furnish. It

is true that we have students who do this of themselves, but to certify to it and have it incorporated in the diploma will mean something more.

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To my mind this movement is of far more importance to the hospital than it is to the medical school. The conditions in detached hospitals are deplorable. I believe that the service rendered and the research done in the wards will do more than anything else to elevate the work being done in these hospitals.

REPORTS OF OFFICERS AND COMMITTEES

REPORT OF SECRETARY-TREASURER

Your Secretary wishes to present a rather brief report on the actual status of his office, inasmuch as all of the important questions dealing with the administration of the judicial matters have been referred to the Judicial Council for action, and to the various committees have been referred such matters as bear on the functions of these committees. Therefore, this report may, with propriety, be brief.

The membership of the Association at the present time numbers 48. Only one college has been dropped from the roll during the year, the Medical Department of the University of West Virginia, which became extinct, and therefore was dropped automatically from membership.

Applications for membership were received from the Medical School of Maine, the Medical Department of Bowdoin College, Yale Medical School and the Medical Department of the University of Pennsylvania. Other applications still in the hands of the Council are those which were received prior to the last meeting, on which action was deferred for various reasons, in the case of the Dartmouth School of Medicine because the application was received just before the time of meeting and it was impossible to make an inspection.

In accordance with orders received from the President and the Chairman of the Judicial Council a call for an assessment of \$15 was sent out immediately after the last meeting and the response was prompt in many instances. The financial statement shows that forty-five colleges have paid the assessment, three being still in arrears, but having served notice that the assessment would be met. Forty-seven colleges have paid the annual dues, the remaining college having advised your secretary that the legislature of the state in which it is located had been slow in making the annual appropriation for the university, but that the bill has been allowed. Therefore, it may be reported that no college is in arrears for dues or assessments.

The matriculation record blanks were sent out promptly and are being returned in good shape. All of the blanks have not yet been returned by the colleges, but inasmuch as the time limit for such return has not yet expired, no action need be taken in the matter.

The transactions of the 1911 meeting were sent out as widely as in previous years, four hundred copies having been distributed. In sending out these transactions it was aimed to reach not only medical colleges in and out of membership, but state examining boards, state medical societies, who are becoming actively interested in medical education, libraries, universities, colleges and all organizations interested in this work. It is desired to reach all those who are interested in medical education, and for that reason the secretary has made a card mailing list which is growing rapidly, but which necessarily is changing almost, one might say, from day to day.

The financial statement shows a net balance on hand of \$360.02. Only two bills remain unpaid, having been received after the books had been closed. These two bills are a printing bill of \$4.00 and the bill of the Chairman of the Judicial Council amounting to \$75.00. These bills will appear on the financial statement for next year.

Respectfully submitted,

FRED C. ZAPFFE,

Secretary-Treasurer.

REPORT OF THE JUDICIAL COUNCIL

Since the last meeting of the Association applications for membership were received from the medical departments of the University of Pennsylvania, Yale University, University of Dartmouth, and the University of Maine known as Bowdoin Medical College.

The Council wishes to recommend for membership the Medical Department of the University of Pennsylvania and the Medical Department of Yale.

We ask that final action on the applications of the Dartmouth Medical College and the Bowdoin Medical College, representing the Universities of Dartmouth and of Maine, be postponed until the next annual meeting. Council was unable to make a proper inspection of these colleges. Arrangements for inspection were made but owing to circumstances that could not be overcome they were not completed. The Council finds itself, therefore, unable to make definite recommendations.

After due consideration of the application of the Medical Department of the University of Vermont, membership is recommended.

The Council is unable to make definite recommendation on the application of the Medical Department of the University of Alabama and, therefore, recommends that further action be postponed one year, and that in the meantime an inspection of the college be made.

In the matter of the application of the University of Nashville and the University of Tennessee, the Council decided that this

school has passed out of existence, and that the new school located at Memphis, Tennessee, and known as the Medical Department of the University of Tennessee is a new institution, and that a new application for membership will have to be made before it can be considered.

The status of the Medical Department, so-called, of the University of West Virginia was thoroughly considered by the Council and the conclusion reached that inasmuch as the University of West Virginia has no medical department, with a separate medical organization and a medical faculty, distinct from the College of Arts and Sciences, the ruling made by the Chairman of the Council in September, 1911, that the medical college is no longer in existence, should be sustained, and that no time credit can be given by any of the colleges of the Association to the students in attendance this session.

The Council further recommends that as soon as the medical department is properly organized to meet the requirements of the state medical boards and of this Association, and receives recognition from the state medical boards, the college should be readmitted to membership.

The situation of the Meharry Medical College, of Nashville, Tenn., was carefully considered by the Council with Dr. Hubbard. Owing to insufficient financial support of colored schools and racial environments, this college with others is unable to meet the requirements of the Association. The work these colleges are doing is considered invaluable in helping the negro race. The Council, therefore, recommends that the Association establish an affiliated membership restricted to such medical colleges as are exclusively for the colored race, and that Meharry be continued in membership in this class.

The Medical Department of Washburn College, Topeka, Kansas, having failed to make the improvements suggested one year ago by the Committee that inspected the school, the question of suspension was considered. The president of the college, Dr. Sanders, was given the privilege of presenting the facts to the Association. After due consideration the Council recommends that this college be given one more year in which to meet the requirements of this Association.

After due consideration, the Council recommends the adoption of the following rules:

1. The credentials of all applicants for matriculation to a medical college a member of this Association shall be submitted to the appointed Examiner for evaluation, who shall issue a certificate of entrance only on the condition of the applicant having completed the entrance requirements of the Association. The certificate must indicate the credentials upon which it was issued.

2. The Examiner shall keep on file in a convenient place all credentials presented by the applicant or satisfactory data from which to verify them.

3. The credentials or data shall be open to the inspection of any representative of the Association for verification.

4. The examination papers of applicants who enter by examination shall be kept on file.

The subject of granting time and scholarship credits to students from Class B and Class C schools was discussed. It is an important question and deserves careful consideration. It was the consensus of opinion that students of low grade colleges may be accepted and given credit by Class A schools. The Council recognizes the difficulty in formulating rules by which credentials of such students may be evaluated. As a precautionary proposition it is recommended that the greatest care be exercised in accepting students from colleges that have a rating below Class A in the American Medical Association classification without thorough examination on all subjects for which they may seek credit.

The College of Physicians and Surgeons, of Los Angeles, California. Inasmuch as the rating given by the Council on Medical Education of the American Medical Association and other evaluating bodies indicates that this college may not measure up to the standard of this Association, Council recommends that the college be inspected by some one appointed by the Council, the expense of such inspection to be met by the college, the report of the inspector to be considered at the next annual meeting, before final disposition of the case.

The University Medical College of Kansas City, Missouri. This college has discontinued teaching the first two years of a medical course and has organized as a clinical school offering only the third and fourth or so-called clinical years. Council is in doubt as to the legal standing of the school. It recommends, therefore, that membership of the University Medical College be continued until Council can satisfy itself as to the standing of a clinical school of medicine, such as is advertised by this college, in its relation to the rules and regulations of the Association.

Council recommends that this Association should take cognizance of the classification made of medical colleges by state medical boards or other evaluating bodies, and where a college, a member of this Association, is not classed as an acceptable college, the Council shall inspect the same in order to verify or correct the adverse rating.

Council recommends that the Nominating Committee shall present the names of two candidates for each elective office, and that any member has the privilege of presenting in writing to the Nominating Committee one hour after the appointment thereof the name of any eligible person for any of the elective offices.

Council also recommends the election of the following persons as associate members: W. F. R. Phillips, George H. Hoxie and Fred C. Zapffe. Two of these gentlemen were active members of the Association in past years, one serving a term as President. Dr. Phillips is now professor of anatomy in the Alabama University. Your Secretary-Treasurer, Fred C. Zapffe, is not connected with any medical college and it is nothing more than proper that he should be made an associate member.

(Signed) W. J. MEANS, Chairman.
 R. WINSLOW.
 E. LE FEVRE.
 C. M. JACKSON.
 J. A. WITHERSPOON.
 J. R. GUTHRIE.
 C. R. BARDEEN.

REPORT OF COMMITTEE ON PEDAGOGICS

At the last meeting of this Association the following resolution was adopted:

“Resolved, That the Association request each school in membership to ascertain and file in the dean’s office the estimate of each instructor as to the amount of time required, both in the classroom and at home, in each course offered in the catalogue.”

In accordance therewith your committee sent blanks to the different schools asking them to report their findings in this matter. From the entire membership sixteen usable reports were received. Of these, four were from schools giving only the first two years of work, and one from a school giving the last two years. These reports show that the curriculum varies in its demands on the student’s time from 5,628 hours (Detroit) to 9,796 (Tufts). In the first two years work the range is from 3,315 hours (Missouri) to 4,600 (Wisconsin). The University Medical College of Kansas City calls for 5,632 hours during the last two years. We wish to commend the position of Georgetown University which proposes to make the home study part of the published requirements. Georgetown now demands 8,000 hours for the four years. This gives a weekly (counting 34 weeks to the year) stunt of 49 hours, or a day’s work of something over eight hours. The reports from Bellevue, Missouri and Stanford were particularly valuable in that they showed the students’ estimates as compared with the instructors’. Syracuse, Tulane and Meharry gave us particularly carefully worked-out reports. In these institutions the total time requirements are 8,307, 9,209 and 9,728 hours respectively.

In those reports where a comparison between the estimate of the students and that of the instructors was made, the interesting result appears that the average time required of the student exceeds

greatly the estimate of the instructor. In one case the instructor's estimate was two hours while the student's estimate was from five to sixteen (average 10.2). This finding, and that too with excellent instructors, shows the need of checking up this matter of arrangement of work.

The returns from our questionnaire make evident that the colleges are meeting the time requirement of our curriculum in two diametrically opposite ways. The one group believes that the 4,000 hours represent the total time to be required of the student. The other group requires 4,000 hours in the classroom and preparation time besides. The result among the colleges of this latter group is that they demand of the average student some nine to ten thousand hours of work in the four years.

The views of the first group may perhaps be expressed best by quoting from a letter of one of our deans to the chairman of your committee, as follows:

"It is my belief that, as a rule, a curriculum is not planned upon the basis of the hours required for preparation but upon the basis of the time required to cover, satisfactorily, in the classroom, the subjects that must be dealt with. Each day has a certain number of hours that may be devoted to instruction. Suppose that each day has six such hours, and that each of these hours means at least one hour of outside work of preparation, which I should say is little enough, providing the instruction is of routine didactic sort. This will make twelve hours per diem, which I think unreasonable. As a matter of fact the teaching day ordinarily contains seven to eight hours of instruction of one sort or another, and this upon the basis of hour for hour preparation means fourteen to sixteen hours of student work, which is absurd. To get around such an absurdity or to remove it, I rather feel that the only required preparation should be for quizzes, for I believe that if didactic instruction is given in the proper manner, in the form of conferences, and if laboratory instruction is individual and not formal, that outside work may be left to the discretion of the individual student, and according to the ability of the student or his particular interests, this outside work will consume much time or little. For instance, I have asked one of our sophomores whose standing is very high and whose work is excellent how much time he consumes in preparation for his work. He tells me that he averages from half to an hour per diem for all his work. In explanation I should add to this that our sophomore work is almost exclusively laboratory work and that the teaching outside the laboratory is systematic conference work.

"I believe that if we put the emphasis on a student's ability to think—to work out things for himself—and help him in rough places, and not insist on his book preparation that we shall be unable to lay down any average rule, or a minimum rule for prepara-

tion. In other words, I should say that the time actually required for preparation for scheduled work varies in proportion to the inadequacy of the methods of teaching."

On the other hand we find the so-called university schools work in general on the basis of requiring outside reading and study. Their general feeling is that—as expressed by one dean—"I desire to say that in my opinion there should be as many if not more hours devoted to the preparation of lessons than is allotted for recitations, lectures and laboratory work."

Your Committee believes that our schools of medicine would be far more efficient if they would give this matter more attention, and as a result have their instructors arrange their material more carefully with reference to its being covered in the time allotted.

Very few teachers and still fewer university administrators, take carefully into account the total amount of work required in any course. There is certainly a great difference in the amount of work required in different courses for which the same number of university credits are given, yet in arranging schedules so as to have a fair proportion of time given to each subject this really ought to be taken into consideration. It is by no means impossible since the students can be induced to give honest accounts of the work they actually do for several specific weeks and, when a sufficient number of such accounts are averaged, reliable data may be gathered concerning the amount of work actually required in different courses.

It seems to us self-evident that the whole body of medical knowledge cannot be acquired and digested by the ordinary student in 136 weeks. Nor is it desirable that he should do this. But it is desirable that the graduate from our schools be thoroughly grounded in the principles of pathology and therapeutics and that he command the scientific procedures by which additional knowledge is to be obtained.

Furthermore, we should graduate our students ready to practice; for it will be many years before a hospital internship will be within the reach of the majority of our students. This is true because only in the metropolitan centers are the hospitals so equipped and so managed that they will benefit rather than damage the intern. We need only to state these facts to secure your general assent.

With these facts in mind we believe that in many schools there should be a decrease in the amount of material presented, and that in all a study of our courses should be instituted to secure the incorporation of the essential and the exclusion of the non-essential. The basis for the course of study should be the student's strength. With this we dealt in our last year's report.

We concluded then that 1,920 hours represented what should be the average requirement for a 32-week year (2,160 hours for 36 weeks). This makes an 8,000 hour course as much as should be

demanded. But even if the Association rejects our last year's figures; at least, as one member of the committee writes, "*Some definite time basis must be agreed on, within which it is possible to teach properly the material outlined in a syllabus of each subject. I would suggest,*" he continues, "that the proportionate distribution of hours in our 4,000-hour curriculum be extended to include eight hours per day (this to include *both* classroom and outside study) for five and one-half days per week. This, in thirty-two weeks, would amount to about 1,400 hours per year, or 5,600 in the four years."

The course of study should then be fitted to a definite number of hours and not to our conception of what we should like to have our graduates know.

We must then restrain the enthusiasm of the research workers and stimulate both the knowledge and the zeal of the busy practitioners among our instructors. To do this most easily would be to set before them analyses of the material to be taught, thus showing what is essential to the student's progress. While there are evils incident to the use of syllabi, these are less than the advantages so long as our faculties must consist largely of unpaid teachers, and largely of men without the pedagogic instinct or training. The syllabi must not dictate methods, but rather should indicate the relative value of the material to be taught in each department.

Finally, we believe that some action should be taken by this Association, for we believe that every experienced teacher connected with this Association will assent to the statement that our graduates are not now being turned out with a symmetrical training, or a training that fits them for practice. We hide our shame under the requirement that they take a year at least in a large hospital, or as assistants to practitioners. But far fewer than half our graduates do this and we by that very fact are convicted of inefficiency.

GEO. H. HOXIE, Chairman.

REPORT OF EQUIPMENT COMMITTEE

Your Committee has considered the lists of equipment previously adopted by this Association and has decided not to attempt to revise them at the present time. These lists were prepared with care. They have found their way into state board requirements. Frequent changes would lead to confusion. It should always be borne in mind, however, that such lists are of value for suggestion only. They should not be used as absolute criteria either in the fitting out of a college or in classifying institutions.

Your Committee has taken as its task the attempt to formulate the principles which should govern a college in the choice of equip-

ment, and which should guide an investigating committee in determining whether a school is adequately equipped. The report is based on the assumption that few schools have funds for all that they would like to do or like to have. How should the institution with limited funds be guided in their distribution so as to get the best possible results? That is the fundamental thought in this report.

The first and absolute essential of a medical school is teachers. The formulation of the principles involved in the selection, evaluation and organization of a teaching force comes in the work of your Committee on Pedagogy. We shall only say on this point that to spend money on equipment without providing adequate trained instructors is as fatuous as to buy ships and armament for a navy and provide no officers. We may also state here the first principle in equipping a new department: *Get the man first, let him get the equipment.*

Taking up the material attributes of a school, which may in a broad way be considered its equipment, we may consider (1) buildings, (2) library, (3) laboratories, (4) museum, (5) hospital.

BUILDINGS

Regarding the first, we may say that no building is adequate which is not hygienic. This means that it must be clean, must be light, must be well ventilated and properly heated, and must provide ample space and accessory facilities for the people who are to occupy it. It seems a platitude to name these things, but there is probably no class of people more careless of hygienic laws than doctors. Medical schools are behind the public schools and literary colleges in the matter of sanitary housing. This is the more discreditable when we consider the profession for which their students are being trained and the greater risks of disease to which these students are exposed. We believe that a state board would be as justified in rejecting a school on account of unsanitary buildings as for inefficient teaching or inadequate laboratory facilities. A good janitor "is more to be desired" than marble, and a sanitary toilet than much fine apparatus.

In the construction of new buildings too much should not be left to architects. Few designers are specialists in school building construction, and all architects are more concerned with appearance and decoration than with the purpose for which the building is to be used.

In the planning of new buildings, also, the idea of unit construction should be considered. The Committee believes in the section plan of teaching. This can adequately be carried out only when the quarters of each department have been designed from the standpoint of a standard unit.

LIBRARY

The second material necessity, i. e., equipment in a broad sense, is the library. It is a topic of indefinite extension. Briefly it may be stated that no college is adequately equipped unless there is available for the use of its students a good working collection of *recent* text-books, hand-books, atlases, reference books and journals, at least in the English language. A regular fund for extensions must be provided. The library should be in convenient, well-lighted quarters.

If the school has a properly chosen faculty, research will be fostered. The library facilities for this work should be the fullest possible. Very large expenditures for back files of journals and for expensive books may advantageously be made, *if thereby some other department be not crippled*. Where funds are limited the wisest discrimination is necessary. In general, a well-chosen list of current subscriptions for journals in each branch of science and medicine is the most essential part of a library, from the instructor's and investigator's point of view. Reduced to the lowest possible terms the library must contain the standard abstract journals, by which the investigator and teacher may gain at least a bird's-eye view of his field of study. Consequently back files of such journals should be among the first purchases.

College authorities must learn that the literature should be at hand, even if every paper is not of immediate use. The absurdity of the criticism of the legislative visitor, "Why, there are more books here now than your professor can read!" is apparent. Also the ill-founded joy of the parsimonious trustee who pounced upon a journal in a library and exclaimed, "See here, the pages haven't even been cut."

Care needs to be exercised that the purchase of books and the general administration of the library are kept under the close supervision of the teachers and investigators. Too often restrictions proposed by conservators of books are unduly burdensome on those who use them.

LABORATORIES

Medical teaching makes use of four types of teaching laboratories. The first is for the study of gross anatomy and is accommodated to the dissection of the human cadaver. The second is for the convenient carrying on of chemical reactions in glass and involves a large equipment of desks, gas and water supply, glass and iron ware and various materials. The third offers facilities for microscopic work and is ordered primarily with respect to the care and use of the microscope and the preparation of materials for microscopic study. The fourth is adapted to the use of living material for physiological and pharmacological experiments, with the familiar accessories of apparatus and instruments.

The types of work named involve equipment so diverse that a laboratory can hardly be used for any purpose other than that for which it is designed. *Therefore no school is properly equipped that has not at least one sufficient laboratory of each type.*

Beyond providing the four laboratories named above, the wise college will not go one inch in the way of building student laboratories until it has (1) a complete staff of paid men in every department, (2) laboratories for research, well equipped and adequately served, (3) a good library, (4) a sufficient teaching hospital. It is pleasant to have a pathological laboratory separate from histology, and so on. But the advantages obtained from multiplicity of teaching laboratories will never compensate for shortage in instructors, janitors, technicians, materials (including patients), or library. Down with the building expense! Up with the salary list! Men, not bricks, make a school. Pound this into the trustees if you have to chloroform them to do it.

GENERAL VERSUS SPECIAL EQUIPMENT

The equipment, whether for teaching or investigation, may be divided into *general*, which may be used by two or more departments, and *special*, which is adapted to one kind of work only. Regarding general equipment the principle should be, "Avoid duplication." This applies to lecture rooms, projection apparatus, models, etc. If bacteriology has a large centrifuge, let physiology use it, and so on. This principle, while not absolute, should be applied more thoroughly than is usually the case, even in places where ample funds are not available. Taking the schools as a whole there is enormous waste through unnecessary duplication of equipment.

ANATOMICAL LABORATORY

Taking up the special equipment of the four types of laboratory: For the dissecting room the all-important problem is cleanliness and the proper care of material. *Therefore the most important piece of "equipment" is a good janitor and preparator.* The tables may be of the simplest character. The storage rooms may be of several well-known types. Charts, models, skeletons and prepared dissections are familiar aids to teaching, and the degree to which they are valuable will depend on the kind of course laid out by the instructor in charge. This leads to the formulation of a principle of the utmost importance, i. e., *equipment can only be properly evaluated when one knows the character of the course of study.* In physiology, for example, one professor may treat, in the laboratory, largely the nervous system and senses; another may go in strongly for animal experimentation. One course may be as good as the other; but the equipment for one is not like that for the other. One

teacher may do much with little equipment; another may do nothing with much equipment. To judge equipment wholly apart from instruction is the height of folly. This applies in all departments.

CHEMICAL LABORATORY

In the chemical laboratory the primary necessity is individual equipment for every student. The nature of the work is such that any mingling of equipment or use of the same outfit by different sets of students must lead to confusion, lack of responsibility and therefore low grade of work by the students. The general type of apparatus for demonstration purposes and student use in chemistry is so well known as to need no discussion.

MICROSCOPIC LABORATORY

The primary feature of the equipment for histology, bacteriology and pathology is the microscope. There must be individual microscopes for the members of a section and preferably for every student. The evaluation of the equipment of microscopes should involve more than the counting of the instruments on a shelf. No college is adequately equipped when it has a set of old microscopes that even an expert could not use, to say nothing of an unskilled student.

The advantages to be gained in having the student own his microscope, both from the side of use and care while in school and also from the necessity of his having one when he goes into practice, cannot be overestimated. We commend the system by which students are allowed to purchase microscopes on the installment plan which is in use in several schools.* The accessory apparatus for the microscopic laboratory is very important but cannot be mentioned in detail.

A word should be added regarding bacteriology and pathology. While we have assumed that these branches may be taught in the microscopical laboratory, it should be borne in mind that modern teaching in these branches involves the use of animals for experimental purposes. Adequate equipment therefore must involve proper facilities for the care and use of living material, as in the fourth type of laboratory.

PHYSIOLOGICAL LABORATORY

For the physiological and pharmacological laboratory we recommend such an equipment as will permit a fairly wide range of experimentation. If this is provided for every student the expense will be large. Unless, therefore, very large funds are available, so that the greater essentials of men, materials and library are thoroughly provided, it is better to conduct the laboratory work on the basis of series of experiments, each set of apparatus being

* McGill University; St. Louis University.

used successively by different groups of students. If this is done it is not necessary to duplicate apparatus to the point of individual equipment. This is a special application of the same principle of avoiding duplication of equipment which we emphasized earlier.

It is always to be understood that the equipment of the physiological laboratory involves adequate provision for the care and use of animals, not only frogs and turtles but also such mammals as dogs, cats and rabbits. Special rooms or a separate building for animals must be a part of the equipment.

MUSEUM

A teaching museum of well-preserved type specimens is an important adjunct of teaching. The old-fashioned collection of monstrosities and curios was usually only a place where the medical student took his female relations to enjoy their expressions of horror. The teaching collection is quite different. It is kept in dark closets, because thereby the natural colors are better preserved. Such a museum must be built up gradually and can only be secured by having a competent pathologist who has technical assistance and access to an extensive surgical and autopsy service. No medical school is adequately equipped without this type of museum.

RESEARCH

So far as equipment for research is concerned *the principle should be to provide what is needed for the line of investigation in progress rather than to provide for everything that may possibly come up in the future.* To attempt to equip for every field of investigation means a great waste of money for what will not be used and will be obsolete in a few years. The wise department head will organize the research of his laboratory along some particular line and will equip accordingly. Other principles previously enunciated also apply in equipping the research laboratories.

The matter of expenditures for equipment whether for teaching or research should be adjusted by general agreement among the departments. An authorized committee or at least an informal conference of department heads should arrange the distribution of funds and approve the general lines of the expenditures. When each department goes independently to the dean or president and urges its needs, we have the basis for very unequal support of departments, for unnecessary duplication of equipment and worst of all for serious lack of harmony and even personal enmity.

HOSPITAL EQUIPMENT

So far as the fifth great division of equipment, that of the teaching clinic and hospital is concerned, the committee would merely call attention to the manifest needs of a different and greater

equipment in a teaching hospital from that necessary in an ordinary hospital. The medical college is not doing its duty which equips only the fundamental departments. This remark applies to all the needed equipment of the clinical years. Even when the hospitals are loosely attached by affiliation, the college should furnish the special equipment needed for teaching purposes. The same principles should apply as regards the distribution of funds, and avoidance of unnecessary duplication and the folly of purchasing special apparatus against possible future needs, as in the case of the fundamental laboratories.

It might be well for some future committee to attempt to formulate a list of necessary and of desirable equipment for the teaching hospital. Or this might be done by the Council on Medical Education in its proposed investigation of hospitals.

Respectfully submitted,

E. P. LYON, Chairman.

REPORT OF COMMITTEE ON STATE MEDICAL BOARDS

Your Committee has, in the main, been engaged in assisting other organizations in effecting an amalgamation of the two state board federations, this work having received its impetus through the efforts of our president, Dr. Harlow, who shortly after the meeting in 1911 called together representatives from various organizations to consider this question. A report of this and other meetings held during the year has been published from time to time in *The Journal of the American Medical Association*, so that it is not necessary at this time to make a detailed report. The Committee merely wishes to report that these negotiations are still under way, and that it is hoped that the amalgamation will be effected within the next few days. The sentiment in favor of a single strong state board organization is, indeed, a strong one, and the decision rests practically with a single organization now, the American Confederation of State Examining Boards, all other organizations, and especially the National Confederation, having agreed to all the details for reorganization presented by the various committees to whom this matter was referred.

The relationship of this Association to the state medical boards is growing stronger all the time, and the results of such cooperation are making themselves felt everywhere. The committee is doing all in its power to maintain and to further the work of this Association in connection with state boards and is well satisfied with the results obtained.

Respectfully submitted,

FRED C. ZAPFFE, Chairman.

W. J. MEANS.

J. R. GUTHRIE.

REPORT OF THE COMMITTEE ON MEDICAL RESEARCH

Since the last meeting several times bills have been introduced into the Legislature of New York State, having for their object the control of vivisection in medical colleges and research laboratories. The bills were of two types, one restricting very definitely the use of animals and calling for the licensing of the experimenter and also of the building in which the animal experimentation is held, together with a detailed report of all experiments and the number of animals used. This type of bill had been urged by the Anti-Vivisection Society and up to the present time, has been defeated in the legislature.

Another type of bill is known as the "investigation bill." It did not seek openly to control vivisection, but called for an investigation of the methods used and the extent of vivisection in New York state, both in the medical colleges and research laboratories. This type of bill has also not received favorable consideration in the committee to which it had been referred.

Recently there has been another bill to amend the penal code by adding a section to the law covering cruelty to animals. This bill is still before the legislature.

Inquiry has failed to show any great activity in any other state, so that New York seems at the present time to be the star center in regard to animal experimentation. The agitation of the anti-vivisectionists seems to have had an educational influence as the general public have had the pros and cons presented to them and seem to be willing to entrust the matter to the medical profession.

EGBERT LEFEVRE, Chairman.

MINUTES OF THE TWENTY-SECOND ANNUAL MEETING HELD AT
CHICAGO, FEB. 28, 1912, UNDER THE PRESIDENCY OF
DR. WM. P. HARLOW (UNIVERSITY OF COLORADO)

MORNING SESSION

The delegates assembled in the Congress Hotel and were called to order by the president at 10 a. m.

ROLL CALL

The roll call showed that thirty-six of the forty-eight colleges in membership were represented by delegates, as follows:

Leland Stanford Jr. University Department of Medicine.—Wm. F. Snow.

University of Colorado School of Medicine.—W. P. Harlow.

Georgetown University School of Medicine.—J. D. Hird.

George Washington University Department of Medicine.—W. C. Borden.

University of Illinois College of Medicine.—H. B. Ward.

Indiana University School of Medicine.—B. D. Myers.

Drake University College of Medicine.—W. W. Pearson.

State University of Iowa College of Medicine.—J. R. Guthrie.

Washburn College Medical Department.—F. K. Sanders.

University of Louisville Medical Department.—W. Ed. Grant.

Medical Department of the Tulane University of Louisiana.—

I. Dyer.

College of Physicians and Surgeons (Baltimore).—C. F. Bevan.

University of Maryland School of Medicine.—R. D. Coale.

Medical School of Harvard University.—H. A. Christian.

Tufts College Medical School.—F. M. Briggs.

University of Michigan Department of Medicine and Surgery.—

R. Peterson.

Detroit College of Medicine.—F. Walker.

University of Minnesota College of Medicine and Surgery.—F.

F. Westbrook.

University of Missouri School of Medicine.—C. M. Jackson.

St. Louis University School of Medicine.—E. P. Lyon.

University Medical College (Kansas City).—S. C. James.

College of Medicine University of Nebraska.—R. H. Wolcott.

John A. Creighton Medical College.—H. W. Wightman.

Syracuse University College of Medicine.—J. L. Heffron.

University of Buffalo Medical Department.—H. U. Williams.

University and Bellevue Hospital Medical College.—E. LeFevre.

University of North Dakota College of Medicine.—H. L. French.

University of Cincinnati Medical Department.—P. G. Woolley.
 Western Reserve University Medical Department.—F. C. Waite.
 Starling-Ohio Medical College.—W. J. Means.
 State University of Oklahoma School of Medicine.—R. F. Williams.
 Vanderbilt University Medical Department.—J. A. Witherspoon.
 Meharry Medical College.—G. W. Hubbard.
 Medical College of Virginia.—C. M. Hazen.
 University College of Medicine (Richmond).—A. L. Gray.
 University of Wisconsin College of Medicine.—C. R. Bardeen.

The following representatives and visitors from other colleges, state examining boards, state and national medical societies were also present:

R. Winslow, Judicial Council Association American Medical Colleges; F. C. Zapffe, Secretary, V. C. Vaughan, University of Michigan; E. H. Bondurant, University of Alabama; Geo. Blumer, Yale Medical School; W. H. Doughty, Jr., Medical College of Georgia; J. M. Dodson, Rush Medical College; J. F. Barnhill, Indiana University; E. J. James, C. S. Bacon and W. H. Browne, University of Illinois; R. S. Copeland, New York Homeopathic Medical College; Geo. H. Matson, Ohio State Board of Registration in Medicine; Chas. F. Meserve, Shaw University; Frank Winders, Starling-Ohio Medical College; B. C. Hirst, University of Pennsylvania; C. P. Lommen, University of South Dakota; J. N. Simpson, College of Medicine, University of West Virginia; E. H. Cary, Baylor University; C. Marshall, Woman's Medical College of Pennsylvania; W. S. Smith, Maryland Medical College; W. H. McCracken, University of Louisville; F. B. Tiffany, University Medical College; H. R. McGraw and Edward Jackson, University of Colorado; W. B. Hill, Marquette University; H. C. Tinkham, University of Vermont; R. H. Whitehead, University of Virginia; L. L. von Wedeking, U. S. Navy; J. H. Cobb, U. S. Public Health and Marine-Hospital Service; P. L. Boyer, U. S. Army; A. D. Bevan, J. W. Holland and N. P. Colwell, Council on Medical Education, American Medical Association; J. A. Duncan, National Confederation of State Medical Examining and Licensing Boards; E. LeFevre, Medical Society State of New York; F. W. Fairchild, Iowa State Medical Society; R. Peterson, Michigan State Medical Society; George Cook, New Hampshire Medical Society; W. L. Estes, Medico-Chirurgical Faculty of Maryland; F. H. Gerrish, American Academy of Medicine and Maine Medical Association; C. H. Cook and N. H. Powers, Massachusetts State Board of Registration in Medicine; C. P. Tuttle and S. M. Garlich, Connecticut Medical Examining Board; W. S. Nay and E. B. Whitaker, Vermont Medical Examining Board; B. D. Harison and W. H. Bell, Michigan State Board of Registration in Medicine; A. E. Carr, Nebraska Board of Health; A. B. Brown, Louisiana Medical Exam-

ing Board; F. G. Hallett, R.C.P. and R.C.S., London, England; H. D. Harlan, Maryland Examining Board; J. A. Egan, Illinois State Board of Health; F. B. Fuson, Missouri State Board of Health; J. N. Roe, Chicago College of Medicine and Surgery; E. S. Talbot, W. J. Butler, W. L. Copeland, F. H. Martin, E. M. Wickstrom, W. H. Wilson, W. H. Wilder, J. H. Stowell, J. Ridlon, C. H. McKenna, H. M. Ludwig, W. A. N. Dorland, Chicago; H. D. Arnold, Massachusetts.

MINUTES OF PREVIOUS MEETING

The secretary submitted the minutes of the preceding meeting as published in the volume of transactions, and on motion of Dr. LeFevre they were adopted as printed.

REPORT OF SECRETARY-TREASURER

The report of the secretary-treasurer was then called for, and Dr. Zapffe submitted his report (page 59).

On motion the financial report was referred to an auditing committee, to be appointed by the chair.

Dr. Harlow appointed Drs. Guthrie, Westbrook and Gray.

Owing to illness, Dr. Harlow was obliged to vacate the chair, and First Vice-President Christian presided during the remainder of the meeting.

REPORT OF JUDICIAL COUNCIL

The report of the Judicial Council was submitted by the chairman, Dr. Means (page 60). [64]

On motion of Dr. R. S. Coale, the recommendations of the council in the matter of the applications for membership of Yale, Vermont and Pennsylvania universities were accepted, and these colleges were declared duly elected to membership.

Dr. P. G. Woolley moved that the remainder of the report be considered seriatim. Seconded and carried.

On motion, as each item was read, the recommendations of the council were concurred in and accepted.

On motion, the report as a whole was accepted.

REPORT OF COMMITTEE ON EDUCATION

The chairman of the Committee on Education, Dr. F. C. Waite, stated that the committee did not have any special report to make at this time, therefore, none had been prepared.

Dr. Waite then offered the following resolution, which, on motion, was adopted:

Resolved, That in order to promote the advance of instruction and research in the medical schools of the United States, the federal act to remit the excise taxes on alcohol used in museums, universities and colleges for scientific purposes should be so amended

as to permit, under suitable regulation, the use of tax-free alcohol in all laboratories and all departments of medical schools, including hospitals and dispensaries, for instructional and scientific purposes.

REPORT OF COMMITTEE ON MEDICAL RESEARCH

The report of the Committee on Medical Research was made by the chairman, Dr. LeFevre (page 73).

On motion it was ordered printed in the transactions.

REPORT OF COMMITTEE ON PEDAGOGICS

In the absence of the chairman of the Committee on Pedagogics, Dr. Hoxie, the report of the committee was read by the secretary (page 63).

On motion, the report was ordered published in the transactions.

REPORT OF COMMITTEE ON EQUIPMENT

The report of the Committee on Equipment was made by the chairman, Dr. E. P. Lyon (page 66), and on motion was ordered published in the transactions.

REPORT OF COMMITTEE ON STATE BOARDS

The report of the Committee on State Boards was read by the chairman, Dr. F. C. Zapffe (page 72) and, on motion, was ordered printed in the transactions.

Dr. W. J. Means, delegate to the Council on Medical Education of the American Medical Association, reported verbally that he had attended the meetings of the council, but did not deem it necessary to make a written report because the council publishes all the proceedings of its meetings.

The secretary then read the various amendments proposed and which were to be acted on at the evening session.

On motion, an adjournment was taken till 2 p. m.

AFTERNOON SESSION

The delegates reassembled and were called to order by Vice-President Christian at 2 p. m.

Dr. LeFevre reported that Dr. Harlow's condition was somewhat improved, but that he would be unable to preside.

Dr. Christian announced that Dr. Harlow had appointed the following nominating committee: Drs. J. R. Guthrie, P. G. Woolley and R. D. Coale.

The president's address was read by the secretary and, on motion, was referred to the Committee on Medical Education.

Dr. C. M. Jackson (University of Missouri) then read a paper on "Some Mistakes in Teaching," which was discussed by Drs. E. Jackson, Woolley and LeFevre.

Dr. H. A. Christian (Harvard) followed with a paper on "General Examinations in the Medical School," which was discussed by Drs. LeFevre, Dodson and Witherspoon.

Dr. E. P. Lyon (St. Louis University) read a paper on the subject of "Migrating Students." It was discussed by Drs. Means, Peterson, Gray, Dodson, LeFevre, Christian and Lyon.

"The Fifth Year" was the title of a paper by Dr. J. M. Dodson (Rush Medical College). The paper was discussed by Drs. Bevan, Myers, Westbrook, Peterson and Dodson.

The Association then adjourned till 8 p. m.

EVENING SESSION

The association was reconvened at 8 p. m. by Vice-President Christian.

On motion of Dr. LeFevre, the proposed amendments were read and acted on.

As finally adopted, the amendments read as follows:

ARTICLE II.—Section 4.—The annual dues shall be \$25 a year payable in advance not later than March 1. The year shall be estimated from September 1 to August 31, inclusive. Colleges in arrears after March 1 shall be dropped from the membership roll and can be reinstated only by making formal application to the executive council. The power of reinstatement shall be vested in the executive council, subject to approval of the association.

ARTICLE VII.—Section 1.—The officers of this association shall be a president, vice-president, secretary-treasurer, and an executive council of seven members, consisting of the out-going president, the president, the secretary-treasurer and four elective members, two to be elected to serve one year and two to be elected to serve two years, and thereafter, two to be elected at each annual meeting to serve two years. All the remaining officers to be elected to serve one year, or until their successors are elected.

Section 2.—The president shall preside at all meetings and perform such other duties as parliamentary usage in deliberative assemblies and the by-laws of this association may require.

Section 3.—The vice-president shall preside in the absence of the president, and perform such other duties as may be prescribed by the association.

Section 4.—The secretary-treasurer shall record the proceedings of the meetings of the association, and edit and publish the same under the direction of the executive council. He shall collect the dues and assessments from the members. He shall take charge of all moneys that may be received from all sources and deposit the same in a bank in the name of the Association of American Medical Colleges. He shall disburse the money only on order of the chairman of the executive council. He shall report to the executive council on the work of his office whenever requested, and shall make an annual report to the association. He shall perform such other duties as may be required of him by the association and the executive council.

Section 5.—The executive council shall organize after each annual meeting and elect a chairman. After such organization it shall appoint the following standing committees and representatives: 1. Education 2. Research. 3. Pedagogy. 4. Equipment. 5. Representatives to other organizations, and such other committees as may be deemed necessary. The

council shall have and exercise direct supervision, general control and management of the business affairs of the association, subject to the direction and approval of the association. It shall have the power to fix the salaries of the officers and disburse funds for purposes pertaining to the affairs of the association. It shall have the power to investigate any charges made against members of the association for violation of the rules and regulations of the association and to settle disputes between members. It shall inspect and examine colleges making application for membership, and shall inspect colleges in membership in the association that have been discredited by other evaluating organizations. It shall have power to fill vacancies occurring in any of the elective offices during the year.

REPORT OF AUDITING COMMITTEE

The Auditing Committee, through its chairman, Dr. Guthrie, reported that the accounts of the secretary-treasurer had been examined and found correct.

On motion this report was accepted.

REPORT OF NOMINATING COMMITTEE

The Nominating Committee presented the following names for the several offices of the association: President; E. P. Lyon and Egbert LeFevre; vice-president, F. C. Waite and B. D. Meyers; secretary-treasurer, F. C. Zapffe and C. M. Jackson; executive council for two years: W. J. Means, Randolph Winslow, W. C. Borden and F. M. Briggs; for one year: A. L. Gray, C. R. Bardeen, J. A. Witherspoon and F. F. Wesbrook.

The ballot resulted as follows: President, Egbert LeFevre; vice-president, F. C. Waite; secretary-treasurer, Fred. C. Zapffe. Executive council, two years, W. J. Means and R. Winslow; one year, C. R. Bardeen and J. A. Witherspoon.

On motion, those named above were declared duly elected to the offices as named.

Dr. W. J. Means moved that the time and place of holding the next annual meeting be left for the Executive Council to determine. Seconded and carried.

Dr. Lyon moved that it be the sentiment of the Association that the entire group of meetings be carried elsewhere, and that the Executive Council be instructed to endeavor to bring that about. Seconded and carried.

Dr. Witherspoon moved that the Association extend its sympathies to Dr. Harlow and wish him a speedy recovery. Seconded and carried by a rising vote.

The Association then adjourned *sine die*.

W. P. HARLOW, *President*.

H. A. CHRISTIAN, *Vice-President*.

FRED. C. ZAPFFE, *Secretary*.

MINUTES OF THE PROCEEDINGS OF THE ORGANIZATION MEETING OF THE EXECUTIVE COUNCIL
HELD FEB. 28, 1912

The Executive Council met at 10:30 p. m. and was called to order by President LeFevre. The following members of the council were present: Drs. LeFevre, Means, Winslow, Witherspoon and Zapffe.

On motion of Dr. Witherspoon, Dr. Means was elected chairman of the council for the ensuing year.

Dr. Means then took the chair.

The council then appointed the following committees and representatives:

Committee on Education: J. R. Guthrie, chairman; H. A. Christian, F. F. Wesbrook, R. D. Coale and B. C. Hirst.

Committee on Pedagogics: E. P. Lyon, chairman; W. S. Thayer, C. M. Hazen, I. Dyer and Geo. Blumer.

Committee on Medical Research: J. S. Ferguson, chairman; J. Erlanger and H. Sewall.

Committee on Equipment: C. M. Jackson, B. D. Meyers and R. Peterson.

Representative to Council on Medical Education, American Medical Association: W. J. Means.

Representative to National Confederation of State Medical Examining and Licensing Boards: F. C. Zapffe.

Dr. J. A. Witherspoon moved that the secretary be instructed not to send out matriculation record blanks next year. Seconded. Carried.

Dr. LeFevre moved that the secretary receive an honorarium of \$500 for the next year. Seconded. Carried.

Dr. J. A. Witherspoon moved that a blank be drawn up to be sent to each college in membership to be filled out and returned to the secretary for the purpose of serving as a basis to judge their present status.

Adjourned.

W. J. MEANS, *Chairman.*

F. C. ZAPFFE, *Secretary.*

OFFICERS AND COMMITTEES FOR 1912-1913

PRESIDENT: Egbert LeFevre, University and Bellevue Hospital Medical College, New York City.

VICE-PRESIDENT: F. C. Waite, Western Reserve University, Cleveland, Ohio.

SECRETARY-TREASURER: Fred. C. Zapffe, University of Illinois, Chicago, Ill.

EXECUTIVE COUNCIL

Wm. J. Means, Chairman, Starling-Ohio Medical College, Columbus, Ohio.

R. Winslow, University of Maryland, Baltimore, Md.

C. R. Bardeen, University of Wisconsin, Madison, Wis.

J. A. Witherspoon, Vanderbilt University, Nashville, Tenn.

W. P. Harlow, University of Colorado, Boulder.

The President.

The Secretary.

COMMITTEES

EDUCATION:

J. R. Guthrie, Chairman; University of Iowa, Dubuque.

H. A. Christian, Harvard University, Boston, Mass.

F. F. Wesbrook, University of Minnesota, Minneapolis, Minn.

R. C. Hirst, University of Pennsylvania, Philadelphia.

R. D. Coale, University of Maryland, Baltimore.

PEDAGOGICS:

E. P. Lyon, Chairman, St. Louis University, St. Louis.

W. S. Thayer, Johns Hopkins University, Baltimore.

C. M. Hazen, Medical College of Virginia, Richmond.

I. Dyer, Tulane University of Louisiana, New Orleans.

Geo. Blumer, Yale Medical School, New Haven, Conn.

MEDICAL RESEARCH:

J. S. Ferguson, Chairman, Cornell University Medical Department, New York City.

J. Erlanger, Washington University, St. Louis.

H. Sewall, University of Colorado, Boulder.

EQUIPMENT:

C. M. Jackson, Chairman, University of Missouri, Columbia.

B. D. Myers, University of Indiana, Bloomington.

R. Peterson, University of Michigan, Ann Arbor.

Representative to Council on Medical Education, A. M. A.,
W. J. Means.

Representative to National Confederation of State Examining
and Licensing Medical Boards, Fred. C. Zapffe.

MEMBERS

CALIFORNIA

Leland Stanford Junior University, Department of Medicine, Palo Alto and San Francisco.
 University of California, Medical Department, Berkeley, San Francisco and Los Angeles.
 University of Southern California Medical Department, Los Angeles.

COLORADO

University of Colorado, School of Medicine, Boulder and Denver.

CONNECTICUT

Yale Medical School, New Haven.

DISTRICT OF COLUMBIA

Georgetown University School of Medicine, Washington.
 George Washington University, Department of Medicine, Washington.
 Howard University, Medical Department, Washington.

ILLINOIS

Northwestern University Medical School, Chicago.
 University of Illinois, College of Medicine, Chicago.

INDIANA

Indiana University, School of Medicine, Bloomington and Indianapolis.

IOWA

Drake University, College of Medicine, Des Moines.
 State University of Iowa, College of Medicine, Iowa City.

KANSAS

Kansas Medical College, Medical Department of Washburn College, Topeka.
 University of Kansas, School of Medicine, Lawrence and Rosedale.

KENTUCKY

University of Louisville, Medical Department, Louisville.

LOUISIANA

Medical Department of the Tulane University of Louisiana, New Orleans.

MARYLAND

Baltimore Medical College, Baltimore.
 College of Physicians and Surgeons, Baltimore.
 Johns Hopkins University, Medical Department, Baltimore.
 University of Maryland, School of Medicine, Baltimore.

MASSACHUSETTS

Medical School of Harvard University, Boston.
 Tufts College Medical School, Boston.

MICHIGAN

Detroit College of Medicine, Detroit.
 University of Michigan, Department of Medicine and Surgery, Ann Arbor.

MINNESOTA

University of Minnesota College of Medicine and Surgery, Minneapolis.

MISSISSIPPI

University of Mississippi, Medical Department, Oxford.

MISSOURI

St. Louis University, School of Medicine, St. Louis.
 University Medical College, Kansas City.
 University of Missouri, School of Medicine, Columbia.
 Washington University, Medical Department, St. Louis.

NEBRASKA

John A. Creighton Medical College, Medical Department, Creighton University, Omaha.
 University of Nebraska, College of Medicine, Lincoln and Omaha.

NEW YORK

Cornell University Medical College, Ithaca and New York.
 Syracuse University, College of Medicine, Syracuse.
 University and Bellevue Hospital Medical College, New York.
 University of Buffalo, Medical Department, Buffalo.

NORTH CAROLINA

University of North Carolina, Department of Medicine, Chapel Hills
 Wake Forest College, School of Medicine, Wake Forest.

NORTH DAKOTA

University of North Dakota, College of Medicine, University.

OHIO

Ohio-Miami Medical College of the University of Cincinnati, Cincinnati.

Starling-Ohio Medical College, Columbus.

Western Reserve University, Medical Department, Cleveland.

OKLAHOMA

State University of Oklahoma, School of Medicine, Norman.

PENNSYLVANIA

University of Pennsylvania, Medical Department, Philadelphia.

TENNESSEE

Vanderbilt University, Medical Department, Nashville.

VERMONT

University of Vermont, College of Medicine, Burlington.

VIRGINIA

Medical College of Virginia, Richmond.

University College of Medicine, Richmond.

WISCONSIN

University of Wisconsin, College of Medicine, Madison.

AFFILIATED MEMBER

Meharry Medical College, Nashville, Tenn.

ASSOCIATE MEMBERS

Dr. Geo. H. Hoxie, Kansas City, Mo.

Dr. W. F. R. Phillips, Mobile, Ala.

Dr. Henry B. Ward, Urbana, Ill.

Dr. Fred. C. Zapffe, Chicago, Ill.

HONORARY MEMBERS

Dr. George M. Sternberg, Washington, D. C.

Dr. Egbert LeFevre, New York, N. Y.

Dr. Henry S. Pritchett, New York, N. Y.