

ASSOCIATION OF
AMERICAN MEDICAL
COLLEGES



PROCEEDINGS OF THE TWENTY-
NINTH ANNUAL MEETING, HELD
AT CHICAGO, MARCH 4, 1919

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ADDRESS OF PRESIDENT

THE HISTORY, AIMS AND OBJECTS OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

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COLUMBUS, OHIO

This occasion is intensely interesting to me in many ways and many things. It is the crowning incident of half a century in educational matters. Born among the hills of Western Pennsylvania sixty-six years ago, educated primarily in the common schools and academies of that country, I began teaching at the early age of 16 and have been closely associated and identified with educational activities ever since, both as a teacher and as an executive. Fifty years is no short period in a man's life. With me it has spanned two trying periods in the history of our country—that of the Civil War and the reconstructions following—and the World War that has just ceased and the beginning of the reconstruction period now before us.

My interest in medical education as a teacher began in 1892 when the Ohio Medical University, at Columbus, Ohio, was organized. In that college I taught surgery more than twenty years and served in several executive positions—trustee, registrar, treasurer and dean.

In 1900, I represented the Ohio Medical University as a delegate to the Association of American Medical Colleges in session at Atlantic City, and again in 1901 at St. Paul, where I was elected a member of the Executive Council, then known as the Judicial Council, and was made chairman thereof, which position I held nine consecutive terms of two years each. Last year on the termination of my position on the Executive Council, the Association elected me its president. I look on this last incident as a recognition of my activities in medical education and as the consummation of my executive work in educational matters. May I not be pardoned, therefore, for the personal retrospective allusions to my educational career as a teacher and executive?

After some considerable thought concerning what I should say on this occasion, I concluded that a brief review of the history of the association might be interesting and appropriate.

In 1890, Dr. Eugene F. Cordell, professor of the principles and practice of medicine in the Women's Medical College of Baltimore, issued a call to all medical colleges in the United States

to send a representative to meet in Nashville, Tenn., in June, at the time of the American Medical Association meeting for the purpose of organizing an Association of American Medical Colleges. The records at my disposal do not give the names of the representatives present, but there was a large representation, sufficient to show a deep interest in the advancement of medical education throughout the country, and a need for an organization of medical teachers and executives.*

Dr. Aaron Friedenwald of Baltimore called the meeting to order, and Dr. Winslow Anderson of San Francisco, Calif., was chosen temporary secretary.

It was the consensus of opinion among the delegates assembled that a permanent association should be formed under the name of the Association of American Medical Colleges. Dr. N. S. Davis, Sr., of Chicago, who then held a prominent position as a teacher in Rush Medical College, was elected the first president, and Dr. Perry Millard of the University of Minnesota was elected secretary-treasurer. He held the office until 1895, when Dr. Bayard Holmes of Chicago succeeded him. Dr. Holmes held the office until 1902, when Dr. W. S. Hall of the Northwestern Medical School was elected. He served one year, when Dr. Fred C. Zapffe was elected. This was at the meeting in New Orleans in 1903. Dr. Zapffe served as assistant to the secretary from 1895 to 1896, and as assistant secretary from 1900 until 1903, and was, therefore, well informed as to the duties of the position. The fact that he has been continued as secretary-treasurer ever since is sufficient evidence that he has given full satisfaction to the association.

The office of president was thought to be a position of honor rather than of continued active service, and, therefore, the annual changes noted since the organization. The executive duties were largely delegated to the secretary-treasurer and the Judicial Council. Following are the names of the presidents for each successive year up to the present time:

Dr. N. S. Davis, Sr.; Dr. E. Fletcher Ingals, Dr. William Osler, Dr. J. M. Bodine, Dr. J. W. Holland, Dr. H. W. Walker, Dr. Parks Ritchie, Dr. A. R. Baker, Dr. V. C. Vaughan, Dr. W. L. Rodman, Dr. J. R. Guthrie, Dr. S. C. James, Dr. George Kober, Dr. H. B. Ward, Dr. E. Long, Dr. G. H. Hoxie, Dr. J. A. Wither-
spoon, Dr. W. P. Harlow, Dr. E. LeFevre, Dr. E. P. Lyon, Dr. I. Dyer, Dr. C. R. Bardeen, Dr. J. L. Heffron, Dr. W. S. Carter, Dr. W. J. Means. The list is too long to dwell on the merits of each. It includes, however, many doctors and teachers of national fame.

*All the records of meetings of this association, including those of the original association organized in 1876, are on file in the office of the secretary.

Among the vice-presidents we note several eminent writers and teachers, such as William A. Pancoast of Philadelphia, Thomas Opie of Baltimore, H. Bert Ellis of Los Angeles, and others.

The names of the officers have been mentioned for the purpose of emphasizing the type of doctors and educators who helped to organize and maintain the association by giving not only the prestige of their names but of their advice and efforts toward higher medical attainments in premedical educational standards, standardized medical schedules and more rational teaching methods. Had it not been for the influence of such men the association would have gone out of existence long years ago, and progressive medical education would certainly have suffered.

OTHER EDUCATIONAL INFLUENCES

Prior to 1903 the association was practically the only organization directly active in medical education. The National Confederation of State Boards was organized in 1902, and the American Confederation some two years later, because of a difference of opinion among the representatives of state boards of health as to reciprocity.

The Council on Medical Education of the American Medical Association did not become active in educational affairs until about 1903. One of the early provisions in the constitution of the association was that a college applying for membership should be inspected to determine whether it met the standard requirements in educational entrance qualifications and physical equipment and adhered to the medical schedule standardized by the association. No inspections were made by the Association of Colleges other than of those seeking to become members and of those in membership where questions were raised as to irregular practice until 1903, when reinspections of all colleges in membership were begun and continued for many years.

In 1908 the association adopted an equipment outline presented by Dr. Fred C. Zapffe which became the standard requirement of the American Confederation of State Boards and is used as a guide at this time. For a long time the matriculation record blanks prepared and adopted by the association in 1905 were the only ones in use among medical colleges and were used by the boards of health of various states until the Council on Medical Education took up the work in a more effective way.

ASSOCIATION STANDARDS IN STATES

It may surprise some of you to know that the requirements for matriculation of students to medical colleges and the length of the medical course prescribed by the association became the

standard in twenty-two states. Those who recall the jealousies of legislators toward the advancement of medical standards, due largely to the influence of the various cults, will readily understand the influence that the association must have exerted throughout the country. In a way it was unfortunate because the association advanced its standards almost annually, thus constantly creating differences between those established by legal enactments which were annoying to the authorities in different states. For instance, California in the early history of medical legislation read into its law that the standard governing the admission of medical students into medical colleges, the schedule of a medical course, should be that of the Association of American Medical Colleges. Applicants for licensure to practice in that state had to meet this standard. Every change made by the association required a new interpretation of the law and it became almost intolerable to the officials of administration.

CURRICULUM

In 1907, the association appointed the first committee to prepare a uniform curriculum for the first two years of the medical course, composed of Drs. E. LeFevre, dean of University and Bellevue Hospital Medical College; R. Dorsey Cole, dean of the University of Maryland; C. M. Jackson, professor of anatomy and dean of the medical department of the University of Missouri; P. M. Dawson and Henry Albert of the University of Iowa. Their report was read at the annual session of 1908 and adopted. In 1910 a subcommittee, with Dr. H. D. Arnold as its chairman, reported a curriculum for the two clinical years. The report was adopted. The essential feature of this report was that the medical course should cover 4,000 hours, divided into approximately four years of 1,000 hours each. In this schedule the clinical subjects were given 2,035 hours.

After the association, the Confederation of State Boards and the Council on Medical Education united in cooperative work, the progress of medical education made phenomenal strides from year to year until the goal of two years' premedical college preparation in specified subjects has been reached and a well articulated medical schedule, one that no doubt will continue in operation for some years to come. Every regular medical college of the United States has adopted the standard of two years premedical college work based on credits of graduation from a first class high school and four years for the strictly medical course.

TYPES OF MEDICAL COLLEGE MEN

The many discouragements that beset the efforts of those who were active in medical educational work in the early years is a matter of history and can only be appreciated by those who were

participants. There were three groups of medical college men who were interested or thought they were interested in medical education. The first group was composed of self-constituted teachers and doctors who were opposed to any advancement of medical education that might add additional expense by way of new equipment, additional teaching force and clinical facilities. Advanced entrance requirements would tend to keep away from the college medical students from whom it derived its financial support. These men were oftentimes pronounced in their opposition, criticisms and abuse, and frequently tried to form combinations, political and professional, to defeat measures looking toward advancement. The second group was composed of doctors who were interested in the highest type of medical education and who represented colleges well endowed or supported by state appropriations but were not satisfied with the slow progress that was being made by the association and the quality of its members, and, therefore, were inclined to stand aloof and withhold their support and sympathy. The third group was made up of men who stood for higher and better medical education, and knew that radical measures at a time when the profession and the laity were not educated to give sympathetic support, and, as long as legislation was not cooperative, would retard rather than advance higher standards, were willing to work slowly but surely with the hope that their ideals would finally be reached.

The men in the first group of colleges have disappeared almost entirely, except a few representing cults. The educational propaganda carried on largely by the American Medical Association through its Council on Education, supported by the better colleges and the licensing boards throughout the country, proved too much for them. Doctors who taught for gain alone, commercializing education for the influence it brought them, are fast disappearing.

We should not forget in this connection to refer to the inspection of medical colleges made by Mr. Flexner in 1910 under the auspices of the Carnegie Foundation, and his very pointed and critical observations on the low standard of medical education in the United States, as compared with that in Europe, and the inferior quality in equipment and clinical facilities of medical colleges in particular. They seemed harsh at the time, but as we look back over the years that have gone and consider what colleges were then and what they are now, our viewpoint has undergone a decided change; our judgment has been modified, and we now see that in a great many things he was right.

If we had the time it would be interesting to refer to some of the belligerent scenes that a few of us have witnessed at meetings where those who opposed advancement took occasion to express their opinions of such men as Dr. Colwell, myself and a few others. Some of these virulent attacks and criticisms came from

representatives of the different cults as well as from low grade or commercialized colleges. We realized then that progress along any line had never been made without opposition, and that as long as we held to the altruistic purpose of the work in which we were engaged we would ultimately win. We knew that most of the better colleges and universities of the country were our friends and not antagonists; therefore, we were willing to go on until the goal set was reached.

HIGH IDEALS OF MEDICAL TEACHERS

In looking through the proceedings of the different meetings of the association as they were published annually, one cannot help being impressed with the high ideals and far-reaching visions of some of the teachers of medicine in the United States. The annual addresses of the presidents of the association were full of thoughtful suggestions and interesting problems that confronted medical education at the time. The reports of the different committees appointed to prepare schedules for the standardization of the medical course represent immense labor and investigation and a clear and comprehensive knowledge of the subject. These reports now furnish the fundamental basis on which our schools are conducted.

We are all familiar with the standardized curriculum proposed by Dr. Kober and adopted by the association in 1905, and the able report of Dr. Zapffe on "The Equipment of a Medical College" in 1908. Prior to that time we had no standard guide in determining the quality of a medical college. In 1901 Dr. Vaughan read a paper on "The Preliminary Education Best Fitted for the Study of Medicine" in which he advocated practically the same line of study that has been adopted as the standard preliminary requirements at this time.

Professor Henry B. Ward of the University of Illinois in his presidential address gave a critical study of many educational problems that confronted us at that time, and in some particulars are pertinent at the present time.

Dr. Parks Ritchie in 1900 pointed out the necessity of higher standards and urged on the association a careful study of the things that were necessary to bring medical education in the United States to a higher plane. I might mention many others but these are sufficient to get to you the thought that it was through the writings of these eminent men who had ideals and vision that the representatives of the different colleges were energized with the determination to strive for higher things.

In the early years of this century it would have been impossible and disastrous to have advanced medical standards by radical measures to the high plane it now occupies, because of the many opposing factors before mentioned.

Mr. Flexner read a paper before the association at the meeting in 1910 in which he strongly advised against raising the pre-medical minimum requirements beyond the fourteen high school units because the educational facilities in many states of the Union, especially in the South, were not advanced sufficiently to admit of college credit requirement, and he considered it the duty of the association to foster colleges in these states until such time as their educational environments would make it possible for them to meet a higher standard.

EDUCATIONAL PROPAGANDA

To meet all conditions and bring them in harmony with the higher ideals it required first of all an educational propaganda such as was started by this association and was taken up more systematically and effectively later by the Council on Medical Education of the American Medical Association and coincidentally by other organizations, particularly the national associations of boards of health and licensure. Through the educational propaganda of these cooperating bodies it was made possible for legislation along advanced lines in different states which set standards for others to meet. It is rather a coincidence that in many states where the legal standard for licensure remained on a high school basis, the boards of health were enabled to make a much higher requirement of graduates seeking the privilege to practice medicine therein. The fact that this association voted a year ago to require of all its members the present standard of premedical education for matriculation is sufficient evidence that the colleges are now and have been in sympathy with the propaganda for higher medical education.

I am not forgetful of the fact that the publicity campaign of the Council on Medical Education through its inspections and its grading of colleges into classes according to their educational value, was a most potent factor in forcing reluctant colleges to an acceptance of the present standard. They could not thrive under publicity. Now that a minimum premedical standard so long sought has been established I feel that it will be maintained and honestly administered.

There seemed to be some danger during the active war period of mutilating the present premedical standard by condensing schedules into shorter periods, with the specious argument that the same educational accomplishments might be obtained through continuous and intensive work in a shorter period. The flurry that militarism caused has disappeared and a readjustment is being made to former schedules.

There still remains a question in the minds of many educators that the hard and fast rule measured by eight years' primary training, four years' high school training and two years' college

work is not a logical course because it is too long and not well articulated. This, however, will be determined in the future cooperation of men and organizations that have the educational welfare of the young men of this country at heart.

Permit me at this time to suggest that there remains much to be done by medical colleges and medical teachers toward placing medical education on a satisfactory basis. Schedules are fundamental and necessary for systematic and developmental training, but without well equipped scientific laboratories, proper clinical facilities, thoroughly trained teachers, proper coordination of departments and correlation of subjects, the end results will be far from ideal. Therefore, I specifically call your attention to some of the more important things that deserve your immediate attention.

REQUIREMENT OF A FIFTH YEAR OF CLINICAL TRAINING FOR GRADUATION

The first pressing need is a fifth year of clinical work in a hospital as a requisite for graduation. It is an axiomatic fact that where there is no progress there follows retrogression, and if medical education is to rest on present schedules, the future will not be productive of high grade doctors. At the session of 1912 Dr. J. M. Dodson presented a paper on this subject. At that time it was impossible to give the matter serious thought because of the effort to advance the premedical educational requirements to a standard on which a schedule for the medical course might properly be built and because the hospitals of this country were not sufficiently standardized to furnish a proper teaching unit.

It seems to me that very little can be added to what has been said by Dr. Dodson and others in favor of a fifth year of clinical instruction. Only one college has made this advance in its requirements for a graduation and this is Rush, or the Chicago University. Pennsylvania demands an intern year after graduation for licensure. The trend toward this additional training has been so pronounced that very few graduates at the present time begin practice without completing a hospital internship. It seems to me, therefore, that it will be an easy step for the colleges to add one year of hospital training to their curriculum as a requirement for graduation. In fact, I believe that this association should by resolution make this a mandatory requirement of all the colleges in membership for matriculants, beginning Jan. 1, 1920.

The real problem that will have to be met is to standardize hospitals as teaching institutions. A year spent in a hospital where there are no teachers, no particular supervision or educational direction of the work, may be almost useless. It is evident that to raise the standard of general excellency of the profession a fifth year of purely clinical instruction in active clinical service

is needed and must come. Again, it is evident that this instruction can be given only in hospitals and in those where there are well balanced services in medicine, surgery, obstetrics and pediatrics and under the supervision of trained teachers.

HOSPITAL STANDARDIZATION

I believe that the problem of standardizing hospitals, in so far as they are related to medical teaching, should be considered very largely from the viewpoint of medical colleges and medical teachers. No effort directed by organizations not specially or directly interested in teaching medical students can hope to establish a grade of hospitals that will provide the requisites before mentioned. It is to college men, teachers and executives, therefore, to whom we must look for the initiative work in the standardization of groups of hospitals. They are acquainted with the facilities that are needed. My suggestion is, therefore, that the Association of American Medical Colleges should take the initiative in this work. It follows that hospitals desiring identification with the colleges for the purpose of getting interns must meet the standard of requirements that the educational institutions demand. To carry this into effect there should be a committee from the association to work with representatives of other organizations interested in the improvement of the hospitals of the country.

IMPROVED PEDAGOGY.

The next important matter for the consideration of the representatives of this association is the development of better teaching methods. The first step in this direction is to train the teaching faculty in modern pedagogical methods, and second to improve in particular the training in clinical subjects. The observations made in base hospitals during the war brought out the fact that a large percentage of the doctors, although graduates of Class A schools, were not well trained in the technic of physical diagnosis. It was observed that they did not know how to examine patients systematically; that they did not know how to make differential diagnoses. Many of them were sadly deficient in differential examinations of the heart and lungs. They had not been trained carefully at the bedside and in personal examination of patients, and consequently were far short of well trained physicians. These observations brought out the fact that our present medical education is deficient in clinical instruction.

THE ART OF MEDICINE

Medicine is both a science and an art. The scientific subjects can be taught successfully didactically and in the laboratories. The art of medicine can be taught successfully only in hospital

wards and dispensaries, and it can be taught effectively in only two ways: (1) by competent clinical teachers at the bedside to small groups of students, and (2) by personal contact of the students with the patients. In medical schools that do not command large hospital facilities and in those where there is not a full appreciation of the necessity of well directed personal work on the part of the student at the bedside they are not turning out well trained physicians.

In my inspection of medical colleges in the past years I was very strongly impressed with the feeling that the question of higher medical education would not be solved by any manner of means until the problem of better clinical teaching was given more consideration. The mere fact that a college complied with time and subject measurements for premedical attainments on the part of the matriculent and that the standard medical course in months and hours was closely observed did not establish in my mind that it was a high grade educational institution. The majority of the teaching faculties of our colleges are composed largely of doctors who are teaching incidentally and practicing their profession for a living. Some of them are ardent, thoughtful and effective teachers; others are only teachers in name. This might raise the question as to the necessity of all time teachers in clinical branches the same as in the science branches. I shall pass this by, however, because it is not fundamental to my present thought.

BETTER CLINICAL TEACHING

In medical colleges where there is evidence of high grade clinical teaching there is also evidence of a correlation of the different departments. The clinical teachers were interested in problems of research and the laboratory teachers were interested in cooperating with them in the development of their investigation. I have been in colleges where the clinical teachers scarcely knew the teachers in the pathologic, physiologic or other fundamental laboratories. This is because they gave no attention to clinical research problems.

The old method of teaching clinical medicine by demonstration still prevails in some colleges, both in surgery and internal medicine. Students may listen to their teachers' dissertations on heart impairments as developed by the teachers' examinations, and perhaps get a mental picture of the conditions, but if they are not permitted to train their own sense of touch and hearing they will be sadly deficient. One might as well try to learn to play a musical instrument by having an instructor do the playing and incidentally tell one how it is done.

A clinical teaching hospital should be modern in all its facilities, and the patients should be subject to study and examination

by the students. Not infrequently we found the management of the hospitals in no way connected or in sympathy with the teaching faculty, and the instruction given the students was meager and perfunctory. In this connection I wish to mention that the inspection of medical colleges for another classification proposed by the Council on Medical Education of the American Medical Association will in all probability develop some disconcerting publicity among colleges of this association. In some cases the colleges do not have hospital facilities in which to give their students good clinical opportunities and on that account they are handicapped in training them for the practice of medicine in all its ramifications. Knowing what I do of the colleges belonging to this association, I will say in all frankness that if they are inspected as to their methods of clinical teaching and teaching facilities, several of them will fall below the rating they now hold. The question naturally follows, Can the association afford to have in membership colleges that cannot be classed among the best? This leads me to suggest that every dean present at this meeting should go back to his college with a firm determination to develop better teaching and better facilities for clinical education. The association should appoint committees to take up specifically the work of improving teaching methods and make a report of their investigation at the next meeting. The association, in my judgment, is the logical organization to do this work. For inspections there should be well trained representatives to cooperate with the Council on Medical Education.

THE HUMANITIES AND THE DOCTOR

Another thought that has impressed me for many years, and one which I believe should be given careful consideration, is that there should be a better test for the entrance of young men to study medicine than the mere educational yardstick. The modern idea of education is to train young men or young women in those things to which they are best adapted mentally and physically to do. When a boy leaves the high school he may be ready educationally to enter a premedical college course and perhaps should be permitted to do so without further question, but during his college course of two years there should be a study made by his teachers as to whether he is mentally adapted and otherwise fitted to enter the study of the science of medicine. It occurs to me that much of the criticism by the laity of the medical profession or of doctors is founded on the weaknesses and immorality of the doctors themselves. To build up a profession that can stand before the people honored and loved, and one that can give to the citizens of our country the greatest good, requires more than mere educational requirements. The humanities must enter into the question of the adaptability of the individual.

MORE TEACHING IN ETHICS

It is far from my purpose to criticise my profession, because I love it and I believe it to be the most altruistic profession among men, but this fact only emphasizes my proposition that our colleges should furnish men who can and will live up to the ideals. I believe it is entirely desirable to weed out young men in their early years by directing them into some other lines of work that require a different quality of mentality and morality, and it is not too late at the graduating period to do this culling. I believe that our faculties should teach more ethics and teach them from the beginning of the course to the end by precept and word, so that the students may imbibe ideals as they progress.

In conclusion I wish to take this opportunity before relinquishing my official duties with the association, to tender my warmest greetings to all those with whom I have had the pleasure to come in contact, and to extend my most profound thanks for the courteous and kind consideration which I have received at all times. I sincerely trust that I shall have the pleasure to continue to enjoy the many friendships, both old and new.

WHAT IS THE MOST DESIRABLE METHOD OF LENGTHENING THE MEDICAL COURSE?

GEORGE BLUMER, M.D.

Dean Yale Medical School

The fact that the medical school curriculum of the present day is overcrowded is so obvious that it is almost an insult to this body to mention it. It is, however, pardonable to do so provided such mention is merely a necessary introduction to an expression of opinion regarding remedial measures.

Heretofore it has usually been assumed that when the development of medicine, and the resulting introduction of new courses of study, reached a certain point relief was mainly to be obtained by adding on an extra year of work. As you well know the medical course in the United States has expanded from a single brief course of lectures and demonstrations to a series of much longer and more elaborate courses extending through four, or if one wishes to regard the interne year as an instructional period, through five years. So that expansion has occurred in the past both through the lengthening of the annual working period and through the addition of entire working years.

It is safe to say that so far as this body is concerned many of us had reached the conclusion that we had again reached a point when some sort of expansion was necessary. The problem before us therefore is not *whether* we shall expand but *when* we shall expand and *how* we shall expand.

Assuming the desirability of expanding the course without adding a whole year of prescribed study, three possibilities suggest themselves to mind. I shall briefly place them before you, not with the idea of outlining them in minute detail, but in the hope that I may lead to profitable discussion by this body.

It must have occurred to many of us, particularly as a result of the experiences of the war, that the college year could be lengthened. The present medical school year in most institutions is merely the university year of this country, and the university year has been evolved partly as a result of tradition and partly for climatic and other reasons. In his report for the year 1913-14, Secretary Stokes of Yale University discusses this whole matter, and shows that so far as that institution is concerned there has been during the past century a uniform tendency to decrease the working period and increase the vacation period. In 1814 there were fifty-six days of vacation in the year, and in 1914, 153 days of vacation, and this not counting Sundays during term time. The chief reasons assigned for the long vacations are, first the desire to avoid work during the heat of summer, second the desire

to give instructors time for uninterrupted study, third the opinion, especially among students, that the ends of long terms are unsatisfactory from the point of view of scholarship, and lastly the opportunity which the long summer vacation gives faculty and students for self-support. As Secretary Stokes points out, our customs regarding the length of the study year in the common schools negatives to a considerable extent the climatic argument. If growing children can work from early in September till late in June, surely adults can do so. The necessity of providing adequate time for study by the faculty can be met by proper arrangement of the curriculum and an adequate number of instructors. The question of brain fag in students at the end of long terms can be obviated by a redistribution of working and vacation time, and the question of self-supporting work can be met in the case of instructors by the payment of satisfactory salaries and in the case of students by a system of university loans and *earned* scholarships. I do not pretend in so brief a discussion to have covered all the difficulties but I hope that I have convinced you that the chief ones are not insuperable.

It may be taken for granted that the tendency to shorten work time and lengthen vacation time has not been confined to Yale University but, aside from some exceptions to be mentioned later, is fairly characteristic of American universities as a whole. Assuming this to be true it is fair to ask in the first place why the periods of study and rest in undergraduate schools should be taken as a model by professional schools which are concerned with an entirely different problem and deal with more mature students. The purpose of a medical school is to prepare its students for their life work and a working year of 212 days is a poor training for a profession in which the average practitioner is more likely to work 350. From the students' point of view it would certainly seem desirable to lengthen the annual period of study. We must not, however, overlook the teachers' point of view, and we must recollect that the clinical teacher and some laboratory teachers, such as the pathologists and bacteriologists, have to find time not only for teaching and research but also for a not inconsiderable load of routine work.

Assuming, then, that a lengthened annual period of study is one method of meeting the situation the question arises where it can best be lengthened, and how the additional time can best be used. It would seem as though it would be no great hardship to extend the period of study from early in September to late in June in the preclinical years and possibly extend it to eleven working months in the clinical years. Students at the beginning of their first and second years might spend the extra periods in assigned and supervised reading courses, while students of the third and fourth

years could be required to spend their summers in clinical work either in the dispensary or in the wards. This method would benefit the student without throwing any excessive strain upon the teaching force.

The second plan which naturally suggests itself is the possibility of the general adoption of the so-called quarter system first developed in the University of Chicago and since adopted in two or three other medical schools. From lack of practical experience I am not competent to discuss the merits and demerits of this system but there are doubtless those present who are. From the theoretical point of view one may question whether in the pre-clinical years at least the average student would be able to carry the full four quarters work, while in the clinical years it is questionable whether the present programs do not call for too much formal work. From the point of view of instruction it is a question whether the plan is feasible in the smaller cities. It requires more instructors, and one of the problems in the smaller cities lies in obtaining a sufficient supply of younger instructors in the clinical subjects, particularly in the specialties.

The third possible plan involves the general adoption of the interne year as an instructional year, and here too the school in the smaller city is at a disadvantage. The objection to the interne year as a medical school rather than a State Board requirement lies in the principle that a school naturally hesitates to put the seal of its approval on work not done under its direct supervision. In the large cities it would be possible by adopting the old Edinburgh extramural system to place all fifth year students in supervised hospitals, but in small cities this could not be done as the number of available internships would be too small. This solution too involves the question of internships in small hospitals where the securing of competent instruction would certainly be a factor. A system which concentrated the fifth year students in a few selected hospitals might have a disastrous effect on the interne supply of the smaller hospitals as it is questionable how large a proportion of graduates would continue to take further interne service if an obligatory interne year was required. It is true that the situation might be met by paid internships and indeed the existing scarcity has already driven some of the smaller hospitals to this step.

In conclusion, it seems clear that the time has arrived when we must seriously consider the means available for lengthening the medical course. Several plans have been suggested. Each has its merits and its difficulties and we must decide which is the most desirable. It is quite possible that none may be generally applicable and that different ones will have to be used in different schools according to local conditions.

DISCUSSION

DR. IRVING S. CUTTER, University of Nebraska: Dr. Blumer's paper presents what seems to be a very valuable suggestion, and I would like to endorse what he has said. But before making obligatory a fifth year course it seems that we should try to accomplish all that is necessary by utilizing all of the full four years of the medical course.

DR. A. ROSS HILL, University of Missouri: My attention was called to the number of teaching hours last year, and I found that if you count five days a week, which is the case with most of the schools, there are one hundred and sixty hours in an average teaching session in the university. That is a good deal less than is assumed to be our teaching schedule. The University of Missouri decided to try as a war measure the four months course without any holiday, then when some members of the faculty began to complain that we did not have as many teaching days as we had before we were able to prove that we had more. The paper is very timely in calling attention to this matter. As to the question of calling attention to the two semester plan, I have looked that up and find that many colleges have been going through some such arrangement. I have investigated a lot of them and of seventy-seven, twenty-one had gone to the four quarter plan or to three terms.

DR. BURTON D. MYERS, University of Indiana: I think the four quarter plan is only temporary. Three-fourths of those schools have dropped back to the three semester plan since the demobilization.

DR. A. ROSS HILL: In the schools I referred to this plan had been adopted since demobilization.

DR. W. F. R. PHILLIPS, University of South Carolina: On investigation I found that the greater number of medical colleges are reported as having sessions from thirty-three to thirty-five weeks long. If every day that is available for teaching is counted you get in with that—with the usual Christmas intermission and Thanksgiving Day—only two hundred teaching days, and if you do not use every one of those days you get less. I imagine that every medical school is teaching on a basis of a hundred and sixty to a hundred and seventy days instead of two hundred. If we were to utilize every bit of the time within our present curriculum we would not have much occasion to add another year, nor to go over into the summer. I think those in the southern states would find it a little bit difficult to teach as well in the latter part of June, or beginning in the early part of September. Climatically it is very hard to work down there, not only from the personal point of view but in many laboratories it is very difficult to keep materials, for they go bad from day to day. I think we could put in a good deal more time in utilizing what we now have in the thirty-four or thirty-five weeks course.

DR. FRANK C. HAMMOND, Philadelphia: We have already lengthened the school year for the seniors, with only one month's vacation. The students who have finished the three years recommence their work one month later, thus making an eleven months year for the seniors. This makes it rather hard on the clinical men. The plan has not been adopted in the earlier years.

DR. JOHN L. HEFFRON, Syracuse University: One thing that seems to me very important is that it is so difficult to get the medical student so that he can earn something before he is twenty-seven. The Association

owes it to the student to save something in the years of preliminary education. Every student could be trained at least two years earlier into meeting all the requirements before us this morning.

DR. GEORGE BLUMER, Yale University: I suggested in connection with lengthening the year that the primary working period of the year could be left just the same, and then we could adopt some system such as is in vogue in the European universities; in Cologne, for example, it is understood that the men are going to spend at least part of the long vacation in reading. Here we could have it understood that the men would read a certain amount during the holidays under supervision of the student's faculty.

PREMEDICAL REQUIREMENTS FOR RETURNING SOLDIERS

E. P. LYON, M.D.

Dean, University of Minnesota Medical School

MINNEAPOLIS

My attention was called to this matter by the receipt of various circulars from colleges, and I mentioned it to our Secretary, with the result that I found myself elected to present the topic.

I have two or three of the circulars here and will read you a few extracts. This one from the University of Chicago—"Credit for Courses in Progress":

(a) A student called or enlisting for immediate war service, after an attendance of not less than four weeks in any quarter, shall receive one-half credit in each course in which his record at the time of withdrawal is satisfactory.

(b) A student called or enlisting for immediate war service, after an attendance of not less than eight weeks in any quarter, shall receive full credit in each course in which his record at the time of withdrawal is satisfactory.

(c) Claims for further credit on the basis of work of educational value in war service presented by students returning to the university after honorable discharge, will be handled as claims for advanced standing, and will be presented to the Board of Admissions, after consideration by a Permanent Committee on Credit for War Service, consisting of the Dean of the Faculties, the Chairman of the Committee on Military Science, and the University Examiner."

This one is from Yale: "All students of Yale College and the Sheffield Scientific School, who are absent on National service and return December 30, to continue their college course, will be enrolled, not as Seniors, Juniors, etc., but in the numeral enrollment of the classes to which they belonged when they entered the service, and they shall receive their degree as of that class whenever they have satisfactorily completed the requirements for graduation.

"Students who have been in the National service and return on or about December 30, will be given full academic credit for the present college year if the courses pursued for the balance of the year are satisfactorily completed. It may be necessary to require additional study in limited degree to cover the work lost during the first term. The two undergraduate faculties, however, are disposed to give full credit for the year whenever it is possible to do so."

One from the Bureau of Education of the National Government recommends that colleges receiving men who have shown a high degree of intelligence in army work but who do not have the specific requirements for college, consider such students as, perhaps, "war specials." They may be admitted after being examined or interviewed by committees and be permitted to take such subjects as they seem prepared for and finally be allowed to have regular membership in the university.

It struck me that this was a live issue to which we must give some consideration. I wrote letters to the registrars of a large number of universities to see what they were doing. Unfortunately, a good many of them thought I was only concerned with the medical work proper, and referred the matter to the medical schools. It was not the question that concerned medical schools so far as it arose in my mind. But I got back a considerable number of answers, and two or three things are plain. So far as the medical schools are concerned the problem has no proportions. Very few of our students went away. Those who did and came back will drop into their place and fill their necessary requirements so far as I can see. It will affect incoming students to some extent. So far as I can observe, all the universities are trying to be fair in this matter and are not handling the students in a sentimental way, and I believe that the medical schools will not need to go back of the returns that they get. It may be true that some men will be short of some specific subjects and some of the lecture subjects may be less than they would have been under the usual circumstances.

Without going into the matter further, I will say that after I got this much, the problem was settled in my mind along that line, and I did not push it further. You can see what the condition is; a good many colleges have made certain minor concessions. Those are likely to come up to us and you will see that my sentiment at least is that we should accept those. If we need to get the sentiment of this body it might be to my mind fulfilled by some such resolution as this:

Resolved, (a) That this Association adhere to its published requirements for admission as regards total credits and required subjects.

(b) That in evaluating premedical credentials presented by entering students from recognized colleges minor deviations from their usual requirements granted by such colleges to such students on account of war service may be recognized and accepted by the schools of this Association, provided that the deviations are not such as seriously to hamper such students in the medical course.

DISCUSSION

DR. F. C. WAITE, Western Reserve University: The only difficulty I can see is the State Board. We may accept this—and I think the resolution is a very suitable one—but it would be embarrassing later for such a man to complete such a course and then be unable to secure his license so that he can practice. It would seem to me advisable to secure the cooperation of the State Boards.

DR. W. S. CARTER, University of Texas: I move that Dr. Lyon be requested to bring this question before the meeting of the State Federation of Medical Boards, at this afternoon's session.

(Motion seconded and carried.)

DR. BURTON D. MYERS, University of Indiana: It seems to me perfectly proper that an equivalent of the year lost should be given the student. If he was present for two-thirds of the time, he should be given credit for the full quarter; not specially graded but just camouflaged to show. If he was given a two-thirds course in chemistry he could have credit for the full course. We can give him credit but not knowledge, and I am wondering what the effect will be to excuse them from the prescribed subjects.

DR. THEODORE HOUGH, University of Virginia: I wish to bring before you my experience in this connection. In the University of Virginia we propose to give for two trimesters work credit for three trimesters work, without beginning all their work on the first of January—that is, for a degree. The danger of the State Board at once appeared to my mind, and I advised the men not to take any risks but to add on more work. Instead of taking thirty semester hours, to take thirty-six semester hours this year, and the same next year, so as to make the entire requirement, and I was surprised to find how easy it was to work it out in this way.

DR. IRVING S. CUTTER, University of Nebraska: I think Dr. Myers' suggestion is a good one, but how would this suggestion do—that time credit be allowed and the subject credit be allowed to the man carrying the succeeding courses—say in chemistry, for example—to satisfaction? If a man came in deficient, it is not fair to the man or to the medical school to take a man unprepared in chemistry, regardless of his war service, and try to grade him through biochemistry in a subject which he failed to master. It seems to me best that he go back and complete the work on the subject.

DR. JOHN M. DODSON, Rush Medical College: Wouldn't that be done under any circumstances, without a resolution? If a man could not carry the full chemistry he would be sent back for further study.

DR. A. C. EYCLESHYMER, University of Illinois: I move that the report be adopted and a standing committee be appointed to study the matter further.

EQUIPMENT OF A TEACHING HOSPITAL *

CHARLES P. EMERSON, Chairman

INDIANAPOLIS

The selection of equipment for a teaching hospital will depend in no small degree on our answer to the question, "Just how is the teaching hospital to help us in the education of medical students?" for naturally our choice of tools will be influenced by the work at hand.

Our answer to this question is briefly this: In the teaching hospital the student should see medicine and surgery at their best: there he should actually do under good supervision as much as possible of the work he probably will do later in practice. The quality of the work of the teaching hospital should be the best which the trustees of the university can afford; the best of which the teachers in the wards are capable. The ideals which the student gains during his clinical years are powerful determiners of his future work and may direct him for life. Since these ideals may be high or low, the medical school should attempt to make them as high as possible. The students in the wards should not be spectators and auditors only but fellow workers of the teaching faculty. Each student should actually assist in the study and care of as many patients as possible, while in the case of a well selected few patients he should assist in a complete study. Not all patients should be intensively studied, for that would be impossible as well as misleading and might unfit the student for his actual future practice; but a well-chosen few should be thus studied in order that he may see every step in diagnosis and treatment, may understand the reasons which justify many shortcuts, and what is much more important, may see the dangers inherent in each method, and so in the future not use these blindly. Happy the school in whose wards many cases can be worked out. If, however, a school is less fortunate it can at least set aside a few beds for this intensive work. The student certainly must see quality, even though not in great quantity, and it is of interest that some of the finest of advanced work has been the result of such student work.

But we should not discuss the tool without at least a glance at the workman for whom it is intended. Only those clinical teachers should be chosen who can and who do appreciate and use, even though they cannot repeat, the work of the laboratory and research workers skilled in the more recent and ever multiplying

* Report of Committee on Equipment.

methods of diagnosis and treatment. Many a school is handicapped by one or more teachers, very successful in the art of medicine and skillful in handling patients, who intentionally or unintentionally teaches the students that there are easier and more profitable ways of "getting by" and "getting away with it" than those they are supposed to teach. The internes of the teaching hospital should understand that they have spurs to win and certain disgrace if they fail whether the goal be a medical diploma, or a license to practice, or both), for good clinical teaching is difficult if the internes think they confer a favor by their "valuable assistance." And finally, the most of the actual student work in the wards and laboratories should be supervised not by busy successful practitioners, valuable though their advice may be, but by recent graduates, former internes, who give at least two years additional full time and fully paid service and then several more years as half-time salaried teachers. (1)

But now to our subject, "The Equipment of Teaching Hospitals." This may be considered under three headings: the equipment for the routine ward work; second, the elaborate equipment of the special laboratories, as for example the roentgenological department, the electrocardiograph, etc., equipment which the students will watch but which they themselves will not use; and third, the equipment which each teacher would like for his own research work. We will consider this third first and beg for it more sympathetic and generous support. A teacher who is not doing some research is only half a teacher. Each future patient of our student is essentially a research problem. If our graduate treats him medically or operates according to some routine, then he has failed to do his best, for in each case there is some individual problem which demands individual treatment and only a man with a taste for research will find this out.

In our American schools we heed too much the ideals of industrial efficiency. The American genius for standardized production injures our medical courses. Our graduate is not a finished product like an automobile, capable of his greatest efficiency at graduation. He is more like a young plant which we are cultivating, and which when he gains a good start we transplant and watch as he develops professionally to attain his maximal efficiency years later. We can merely give him a start. His success will depend on his ability—yes; but also on the ideals he cherishes regarding his work, on his skill in observation, on the accuracy of his methods of diagnosis, and these he will owe to us. The actual knowledge we impart to him is of fleeting value. Medicine is advancing with disquieting rapidity. That which is true today will, to say the least, be incomplete tomorrow. The student must see for himself that medical knowledge is like a living creature

which lives and grows in the ward, the class room, the medical society meetings and the current medical journals but which soon dies and is embalmed in a textbook. Our ambition would be that our students desire living knowledge: that is, that they try to keep abreast of the current of thought. That they may keep alive we must arouse in them the emotions of research workers, and only those teachers who themselves have such emotions can do this. For that reason a school does well if it is generous in providing each teacher with as much as possible of the equipment he asks for in order that he may work at the problems which interest him, even at much expense and even though his problems usually fail or do not interest us. The first teacher of physiological chemistry I had was intensely absorbed in a research problem which he could not conceal—the sulphur bodies which make a skunk's presence noticeable at a distance. One whole hot spring semester we worked three afternoons a week in that laboratory in that indescribably awful smell. His results were quite interesting, doubtless not very practical, but that man's enthusiasm made some of us better medical students. So a live clinical teacher with his little research problem is a far better teacher than he would be as quiz master or busy consultant covering a ward of fifty beds in two hours.

So our first conclusion is, let your teachers have the apparatus they need for research, even though you can ill afford it. This will aid them to be "live" teachers and the students indirectly will profit.

We next would urge that as much as possible of the apparatus of the clinic be made by the staff men themselves. The student should see them make it, help repair it when out of order, and should be encouraged to try to improve it. In that way he will understand the idea which the apparatus expresses and also will be in a better position to criticise the idea as well as the apparatus. We beg American teaching hospitals to shake off the unfortunate influence of the instrument maker. We happened in Berlin to attend that meeting of the German Medical Congress during which Professor Bier demonstrated to the medical section his hot-air treatment of chronic arthritis. He held up in succession a wooden shoe box with holes whittled in end and side; an elbow of old stove-pipe; a torn piece of flannel blanket, and an alcohol lamp, and these were his words: "Gentlemen, this is the equipment; this is all you need. It costs at the outside two marks." A few months later returning to America we found this apparatus on sale "done" in copper and aluminum, nickel-plated, with asbestos lining, ingenuous cradles, elaborate heating devices, and for prices ranging from \$100 to \$1,200. The private hospital may buy such truck if it wishes, but the teaching hospital, No. Better a wooden

box, an alcohol lamp and a student to watch the thermometer and prevent the ward from catching fire. This student will learn something about heat as a therapeutic agent. The better the chemist or physicist the simpler the apparatus he uses and the more of it he makes for himself. There are few diagnostic and therapeutic instruments which the doctor, student and staff mechanic cannot make. They should be encouraged to do so. There is an element of positive quackery in some of the elaborate apparatus with which our laboratories are equipped, and this cannot but injure the student.

And now we come to the routine ward work. In most teaching clinics the students are responsible for the histories and clinical records. They make frequent physical examinations. Each ward should be provided with more than enough charts, stethoscopes, sphygmomanometers, ophthalmoscopes, perimeters, etc., and not complain very much if one is lost or broken. The school should see that each student while on the ward either buys for himself or has provided for him one individual microscope and as much as possible of special individual apparatus. A few well equipped lockers for which the student signs a receipt and turns back at the end of his service, paying for loss and breakage, will cost the medical school but very little. Under supervision the students should make the red blood cell counts, the leukocyte counts, the differential counts and haemoglobin estimations. They should describe the urine and examine it for albumin, sugar and casts. They should titrate gastric contents, examine grossly and microscopically at least the stools; they should stain the sputum for bacillus tuberculosis. The senior students should not learn the technic of these examinations while on wards. That is a subject for the second and third years. They should not be assigned to the wards as senior students before their actual skill and accuracy have been proven by practical examinations. There is a great difference between knowing how to do a thing and doing it. I know how to play a cornet, but you would not care to hear me try for I never had one good lesson. So a lot of students, and doctors for that matter, spend hours of hard work in their wards and laboratories and publish results which condemn themselves. A medical man like an astronomer should find out just how inaccurate he actually is before he publishes his results. For this reason we have for fifteen years required the third year students, working in pairs, to count their own red blood cells on successive days and at the same hour each day until the counts on two successive days differ by less than 200,000 cells. The wide discrepancies at first and the remarkable closeness of the later reports is interesting proof, first, that the careful student may be guilty of errors of which he is quite unconscious; second, that after about

five or six days the average man may acquire an accuracy which is very gratifying. I remember a graduate of about eighteen years ago, since well known for his accurate work in haematology, a very careful, conscientious worker, who when a third-year medical student had to repeat his counts thirty-one successive days before he could qualify for the wards as senior student. His mistake was interesting; simple inspection showed that he was a little too careful, a little too deliberate; he allowed at various stages of this simple technic a little settling of the cells by gravity which disturbed the homogeneity of the suspension of the corpuscles. How accurate are you? And what is true of blood counting holds in all clinical diagnostic methods, whether in physical diagnosis or in the clinical laboratory. The students should learn not alone how to use a method but also how to find out how well he is using it. A well-known European professor of medicine once told me that he seldom read American case reports. These reports were, he said, very complete, but his experience with Americans always made him wonder how accurate were the results they found.

But to return to the ward. In direct connection with each clinic there should be a small laboratory, simple, with sufficient apparatus for all routine ward work. This laboratory should be directly connected with the ward, for one flight of stairs has long been proven to be a psychologic barrier. Put a small laboratory, even though crude, close to the patient, and the student will make many more trips there and do much better work than if the laboratory were on another floor, and especially in another building. In this laboratory let him have an individual locker for his better apparatus. The supply of common apparatus, test tubes, beakers, etc., should be more than adequate. The student is a fellow worker; equip him. It is depressing and paralyzing of his ideals for him to go to the laboratory to do work demanded of him and find apparatus missing. The expense of this apparatus is small. What if he does break a few test tubes, drop the graduates and light cigarettes with the filter paper because a classmate walked off with the matches? He would not break as much if his teachers actually worked with him. Err on the side of a too abundant supply rather than be too stingy or critical. The apparatus given him should be good apparatus, not by any means the most expensive, for the student should learn to determine the error of his instrument. A poor instrument with an estimated correction is better than a perfect instrument. Only last year we were worried at the seeming inaccuracy of some blood counts. The instrument used was new and of good make. We had it standardized and found an error of 40 per cent. in its calibration! Is yours more accurate than that? Do you know? Are all your haemoglobinometers standardized and do your students make a correction for each determination?

It is important that the student learn to examine his patient as a whole and not depend on others for reports of examinations which he himself has not made, seen made or helped to make. The urine examination is as much a part of the examination of the patient as is the palpation of the abdomen or the percussion or auscultation of the heart. We teachers while demonstrating a case at the bedside do not call for a report of the heart sounds of our patient, we listen ourselves; we do not read the written report of the palpation of his abdomen; we feel it ourselves. So for pedagogic reasons if for nothing else the students should watch us study the blood slide, look over the Wassermann rack and pass judgment on the rest of the clinical work done for us by another by examining his specimens and not his report. The unfortunate separation of laboratory and bedside has reduced the examination of the sputum to the mere search for bacillus tuberculosis. We all know that the mere inspection of fresh sputum often is valuable, and yet our clinic recently had to wait weeks for a supply of white paper sputum cups, since the only cups on the market were red. This is convincing proof that in few hospitals is the inspection of fresh sputum a routine. What a criticism of our teaching hospitals!

And lastly we will mention briefly the special laboratories: the laboratories for serology, for clinical bacteriology, the department of roentgenology, the electrocardiograph station, etc. We would make two general propositions: First, the teaching hospital should have all that is good and the best it can afford; second, in so far as is possible the student should be required to accompany his patient while all of these special examinations are being made, should assist in them if possible, and at least should be encouraged to ask questions as to the tests and their interpretation.

But diagnosis is but one part of the story. Deficient though our teaching hospitals may be in equipment for diagnosis, they are far more deficient in space and apparatus for therapy. This criticism does not apply to the surgical clinics; they are efficient indeed; but what of the medical departments? We are unworthy heirs of the Greek inheritance since we have abandoned the gymnastics, hydrotherapy and other forms of physiatrics which formed so important a part of their therapy. The heavy hand of the Arabian is indeed still upon us and thanks to the education of our fathers the patient still expects the doctor to prescribe some medicine, the more the better. Many doctors still feel that it is beneath their dignity to treat a case other than by advice and a prescription. And yet in the majority of cases nonmedical therapy is actually of greater importance than drugs. The result is that dietetics, hydrotherapy, electrotherapy, radiotherapy, thermotherapy, etc., etc., our abandoned measures in combatting disease, each is the valuable and

efficient weapon of a school of irregulars, and we are ashamed to use them. Perhaps we cannot. How much of these does a teaching hospital practice? In the average curriculum pharmacology, materia medica and medical therapeutics occupy the field. Who lectures on diet, gymnastics, massage and hydritherapy?

The medical schools should lead in a radical reform in medical practice by teaching all that is good in each and every form of physical therapy. This will take time and equipment, and teachers. The teaching hospital should have a diet laboratory, a real solarium, a real gymnasium, and rooms for other forms of such therapy. This equipment would take space but the apparatus itself would not be expensive. The staff men themselves, aided by the hospital carpenter and mechanic, would make all. The important thing is that the schools realize this demand for more complete therapy and that the teaching hospitals lead the way in providing all that is good.

REPORT OF COMMITTEE ON UNDERGRADUATE AND GRADUATE DEGREES

A. C. EYCLESHYMER, Chairman

CHICAGO

Your committee has been asked to report on "Undergraduate and Graduate Degrees." Had it been asked to report on the Certification of Graduate Work its principal object would have been more clearly defined. The committee has attempted, however, to consider other degrees in so far as they concern the medical schools.

In order to obtain the opinions of the medical schools a series of questions was sent to the deans of the Class A schools in the Association of American Medical Colleges who were asked to obtain, if convenient, the opinion of their medical faculties and the deans of their graduate schools. The replies from some forty schools form the basis of this report. It has been impossible to obtain a meeting of the entire committee. Drs. Barker and Novy could not come for a conference, although by letter they have expressed opinions concerning a number of questions. Dr. Angell, Dr. Lyon and the Chairman have had one conference. You may thus be prepared for an incomplete report.

The degrees now given by universities for work done wholly or in part in the medical school are: A.B., B.S., M.B., M.D., M.A., M.S., Ph.D., D.Sc. and other degrees for work done in public health. The work leading to the A.B., B.S., M.B. and M.D. is of the undergraduate type; that leading to the M.A., M.S., Ph.D. and D.Sc. is of the graduate type; the work leading to a degree in public health, in most institutions, is of the graduate type.

Concerning the A.B. and B.S. degrees there is little to be said. Their underlying principles and governing conditions are well established. The fulfillment of the conditions imposed by the colleges and universities as far as the medical schools are concerned, results in the student's taking about three years in the liberal arts course plus one year in medical subjects for the A.B. degree. The requirements for the B.S. degree permit the student to take about two years of work in the liberal arts course and two years in medical subjects. In order to fulfill the time requirements of state boards, students are generally registered in the medical schools for one and two years, respectively. Two schools believe that neither degree should include medical subjects. Five think that the A.B. degree should not incorporate medical subjects. Two suggest that both degrees be given on the same basis. Twenty-six schools approve of the conditions now existing with

reference to these degrees. The committee feels that the situation with reference to the A.B. and B.S. degrees is in general satisfactory.

In some schools the Bachelor's degree is withheld until the time of granting the M.D. degree, when both degrees are conferred. Three schools are in favor of this plan. The committee expresses the opinion of some thirty medical schools in recommending that the Bachelor's degree be granted when earned. In general this means the B.A. at the end of the first year in the medical college or the B.S. at the end of the second year.

In regard to the introduction of the M.B. degree to designate the completion of the regular four-year course in medicine when the interne year is required for the M.D. there is considerable difference in opinion. Six schools are in favor of its adoption, five are undecided, and fifteen are opposed. Those who favor it believe that a large number of men will engage in lines of medical endeavor other than practice, such as expert laboratory work in hospitals; work in sanitary science and public health; teaching in the preclinical subjects or research in our great medical institutes. For such men a year of special training in a chosen subject would be of greater value than a year of interne service. Among those opposed to this degree are many who believe that it would be of no practical value because it would not permit the holder to obtain a license to practice. The committee, however, is of the opinion that this objection has little force since in only a few states does the law prescribe the M.D. degree as a prerequisite for license. Some think that it puts too much emphasis on the interne year. Others oppose it on the ground that it would introduce another degree and when introduced a different relationship, between the Bachelor's and Doctor's degree, from that now existing would be created.

The committee is not of one mind concerning the introduction of the M.B. degree. To some it seems to be a step in the right direction. The committee must point out, however, that the prevailing sentiment of the medical schools is against the introduction of the M.B. degree. The committee makes no specific recommendation.

Before discussing the certification of graduate work, it should be stated that graduate work in the medical school is to be considered only when it forms a part of the graduate work of the university. The appointment of members of the graduate faculty; the general principles concerning the character of the work; the time requirements; the character of theses; the examinations; the conferring of degrees, etc., are all understood to be under the direct supervision and control of the graduate school of the university.

With reference to the M.A. and M.S. degrees there is some diversity of opinions. Five schools object to the M.A. or M.S. being conferred for work done in the medical sciences; two on the basis of the historical association of these degrees with the course in liberal arts; three on these basis that these degrees are unnecessary and that their use only results in the multiplication of degrees. Three schools object to the M.A. degree on the basis of its standing in general for a training in the humanities, but would favor the M.S. degree. Twenty-one schools are in favor of granting these degrees for work done in the medical sciences. Five of these are opposed to offering the Master's degree in the clinical branches. The remaining sixteen would confer the Master's degree in either the preclinical or clinical branches. The conditions and requirements for the Master's degree are fairly well defined and established in the preclinical or fundamental laboratory branches, but are neither defined nor established in the clinical branches. There may be doubt in the minds of many as to the advisability of attempting to formulate any guiding principles at the present time. It is certain, however, that the universities in the near future are going to give greater emphasis to research in the clinical branches. They are going to obtain more and more men whose life work will be teaching and investigating. It is just as certain that these men are going to demand the same recognition for those who pursue research in these branches, as is now given to those doing research work in the preclinical branches. While there is a strong feeling against conferring the Master's degree for work done in the clinical branches, some sixteen schools think that it should be contemplated. As to prerequisites for the Master's degree in the clinical branches, there is pretty general agreement among its advocates that a general knowledge of the field of medicine is necessary; such as that signified by the usual four-year course leading to the M.D. degree. Since it would be quite contrary to the usual practice in universities to grant the Master's degree without a preceding Bachelor's degree, the A.B., or B.S., or an equivalent degree, must also be a prerequisite. As to the parenthetical, or other, designation of the field of special study in the diploma, opinions are evenly divided; thirteen being in favor of a qualifying term and thirteen opposed. The fact that forty-four differently designated Masters' degrees were conferred by institutions of learning during the years 1914-15-16, affords ample precedent for such a procedure. Lt. Col. Arnold in discussing "Higher Degrees in Medicine" has pointed out the need of an advanced degree with less exacting requirements than that for the degree of Doctor of Science; "a degree which shall bear to M.D. much the same relation that M.A. bears to B.A." He suggests the degree Master of the Science of Medi-

cine, M.S.Med. If the field of special study were designated in the diploma, e.g., M.S. (Medicine), M.S. (Surgery), M.S. (Obstetrics), we might thus meet the demand without losing the identity of the M.S. degree, since this would be the degree conferred.

The committee does not see the necessity of having two degrees with essentially the same significance as far as the medical schools are concerned. It would on historical grounds relinquish the M.A. rather than the M.S. Another argument in favor of retaining the M.S. is the fact that it is more frequently an earned degree. The last report of the Commissioner of Education of the United States shows that in 1915-16 the M.S. was conferred but ten times as an honorary degree, while the M.A. degree was conferred 135 times as such.

The committee recommends that the Master's degree, with or without specification of field of study, be conferred for work done in any of the fields of medicine when under the auspices of and approved by a graduate school of equal standing with those in the Association of American Universities.

There are two well-recognized degrees which have been used to designate high grade research work in the medical sciences, viz.: the D.Sc. and the Ph.D. The opinions expressed by medical educators concerning these degrees are pretty hard to summarize. One school feels that neither of these degrees should be given for work in the medical school. Three are opposed to giving either degree following the M.D. One of these states that the M.D. ranks with the D.Sc. and Ph.D. in the academic world; another that the M.D. should be regarded as superior to either and where it is not so it should be made so. Two think that a new degree should be created. One suggests Doctor of Graduate Medicine (D.G.M.); the other suggests Doctor of Medical Science (D.M.S.). Five schools are in favor of retaining both degrees, but state that each should have its special requirements. Four are in favor of no differentiation in the character of the work for these degrees and believe that the candidate should be given his choice. Eighteen schools are opposed to the use of D.Sc. in any form as an earned degree. The last report of the Committee on Academic and Professional Higher Degrees of the Association of American Universities contains the following: "The committee is of the opinion that the subject-matter of the applied sciences, or the professions, constitutes appropriate fields for research leading to the degree of Ph.D. It finds, however, that this degree does not meet all the demands in the various professions for higher training in research, as contrasted with practice, on the part of students who have already had a professional course preceded by substantial collegiate training; so that for degrees representing

advanced research in the various professions it suggests the degree of Doctor of Science with mention of the professional field, to-wit, D.S.Jur., D.S.Med., D.S.Theol., D.S.Eng. It is understood that these degrees shall not be inferior to the Ph.D. in standard and dignity. The D.Sc. without specification of field shall be construed as an honorary degree." The report also contains a pertinent recommendation concerning the use of the D.Sc. and the Ph.D. which reads: "The practice of using the D.Sc. as a variant of the Ph.D. should be abandoned." The last report of the Commissioner of Education of the United States shows that during the year 1915-16 the degree of D.Sc. was conferred five times as an earned degree and thirty-six times as an honorary degree while the Ph.D. was conferred five hundred and twenty times as an earned degree and twice as an honorary degree. It might be added here that while the University of Minnesota has at present several candidates working toward the D.Sc. (qualified), it no longer accepts candidates for this degree.

The majority of the committee believes that the D.Sc. should not be given as an earned degree for work done in the medical sciences, since this degree is now largely given as an honorary degree and since it is desirable that achievement in research should be recognized by a single degree only.

The common practice of granting a Ph.D. for work done in the preclinical, or fundamental laboratory, branches is so well established and so generally approved by the medical schools, that the committee does not feel any modifications are necessary. Concerning the granting of a Ph.D. degree for research work in the clinical branches there is some difference in the opinions of medical schools. Four schools think that the Ph.D. should not be given for work in the clinical branches. Twenty-eight schools approve of offering the Ph.D. for work done in the medical sciences whether preclinical or clinical. As to the prerequisites, in addition to an academic degree, for those who pursue work in the clinical branches the opinions are as follows: Two think the interne year might be counted as a minor toward the Ph.D. Three think it a matter of no importance whether or not the interne year be required. Nine would make the interne year a prerequisite. Nineteen would not require an interne year. The replies to the question asking whether or not the Ph.D. should be qualified when granted in the clinical subjects show that here opinions are pretty equally divided. Fifteen schools are in favor of giving a Ph.D. with a qualifying term such as Ph.D. (Surgery), Ph.D. (Medicine), written in the diploma but not included in the degree or title conferred upon the individual. Fourteen are opposed to any modification or qualification whatever. It is thus obvious that the question cannot be satisfactorily answered at the present moment.

The committee recommends, as in the case of the Master's degree, that the degree of Ph.D., with or without specification of field of study, be conferred for research work done in any of the fields of Medicine when under the auspices of and approved by a graduate school of equal standing with those in the Association of American Universities.

The proper certification of advanced work done along the lines of public health presents a difficult problem. Concerning this many schools offer no suggestions. Five schools believe a degree in this field unnecessary. Twelve think that a degree in public health should be given for advanced work following the M.D. degree. Four think that the D.P.H. should be discontinued and another degree substituted; one suggests D.H. since D.P.H. may be confused with Ph.D.; another that Dr.P.H. be used; a third suggests D.C.M. (Doctor Civitatis Medicinæ). Three think Ph.D. or D.Sc. should be used with the qualifying term "Public Health." One suggests that the degree D.P.H. should be given (1) to graduates in medicine after two years of additional work and (2) to those who enter the School of Hygiene with the same entrance requirements as for Medicine and then devote four years to this work. Three schools agree with the first proposition and four others with the second. It might be added that in 1917 seven schools gave the degree of D.P.H. (Doctor of Public Health). Two schools gave the degree of M.P.H. (Master of Public Health). Four schools gave M.A.P.H. (Master of Arts in Public Health) or M.S.P.H. (Master of Science in Public Health). One gave the degree Gr.P.H. (Graduate in Public Health). One gave the degree of C.S. (Certified Sanitarian). One gave Master of Science in Sanitary Engineering.

The committee would suggest the propriety and possibility of using the present degrees M.S. and Ph.D., both in Public Health to cover all essentially meritorious curricula in this field of work. Such a policy has the great merit of recognizing all the intrinsic necessities of the case of preserving simplicity and avoiding needless multiplication of degrees.

The schools were asked if other degrees should be given and if so to suggest the degrees and requirements for the same. With two exceptions the schools were unanimous in the opinion that no more degrees should be recommended. The committee heartily concurs with this opinion.

The recommendations of the committee might be briefly summarized as follows: The status of the A.B., B.S. and M.D. is comparatively satisfactory. The M.S. (qualified or unqualified) should be the only Master's degree given for work in the medical sciences, including Public Health. The Ph.D. (qualified or

unqualified) should be the only degree given in the medical sciences, including Public Health, certifying the power of independent thought and the ability to do investigative work of a high grade. The work for the M.S., Ph.D. and the advanced degrees in Public Health should be under the auspices of and approved by a graduate school of equal standing with those in the Association of American Universities.

The committee wishes this report to be considered little more than a series of suggestions concerning a subject which merits far more careful study than the committee has been able to give it. The committee feels that the Association should accept the report as such, and at once appoint a standing committee for the purpose of giving further study to the problems. This standing committee should cooperate with the committee appointed by the Council on Medical Education and the committee appointed by the Association of American Universities and other organizations which may be interested. Your committee is confident that this is the best method of approaching a satisfactory solution of the problems.

(Signed) J. R. ANGELL.
LEWELLYS F. BARKER.
A. C. EYCHLESHYMER (Chairman).
E. P. LYON.
F. G. NOVY.

THE DESIRABILITY OF CHANGING THE TYPE OF WRITTEN EXAMINATIONS *

GEORGE BLUMER, M.D.

NEW HAVEN, CONN.

The purpose of medical education is not to produce walking encyclopedias of medical knowledge. While the acquisition of the rudiments of medical knowledge is a part of medical education and a somewhat important part, it is nevertheless true that the sum of medical knowledge is so vast that even were it desirable to attempt to teach it, it is not possible for any single human intellect to digest and retain it. Much more important in medical education than the acquisition of mere knowledge is the development of certain specific qualities and habits of thought, the summation of which may be described as the scientific habit of mind.

There is doubtless room for some difference of opinion as to the relative importance of the different mental qualities and attainments that are most desirable in a student of medicine. It is probable, however, that there is tolerably substantial agreement among medical educators as to what these qualities and attainments are. A student of any science must be acquainted with the technical language of that science. He should be able to spell that language correctly and he should possess sufficient mental clarity to enable him to express his views regarding a technical subject in clear and intelligible language. As he must absorb his knowledge from lectures, books and magazines, he should possess a critical faculty, and should be able to separate the wheat from the chaff. He should be able to interpret the various forms of graphic presentation that are used in medical science and practice, such as pulse tracings, physiologic tracings, statistical tables, temperature charts, and the like. He should be able to present his own ideas in graphic form when they relate to subjects capable of being expressed in that way. He should be able to gather facts, and he should be able to reason from facts. He should possess trained powers of observation, he should be able to concentrate on the work in hand, and he should possess the ability to put through any work assigned to him. He should possess health and vitality, and he should know how to keep these necessary attributes.

No one will deny the necessity of submitting the medical student and the recent medical graduate to definite tests in order to permit the university authorities, in the one case, or the state boards of examiners, in the other, to determine their fitness to practice medicine. It does not suffice for the universities or exam-

* Read at the Joint Meeting with the Federation of State Medical Boards.

ining boards to lay down a certain course of study that must be pursued in order to graduate and obtain the right to practice. It is essential that the candidate who desires to apply his knowledge to the actual treatment of patients should prove that he or she has mastered to a sufficient degree the principles that underlie the science and art of medicine. Without the safeguard of licensing examinations, the public would be even less well protected than it is at present from fraudulent practitioners and the half-baked followers of half-faked cults.

Assuming, then, that there is a general agreement that tests of fitness are a necessity in connection with the practice of a profession like medicine, the question arises whether the present methods of testing fitness cannot be improved on. It may be pointed out, in the first place, that the tests as applied by the medical schools are usually not the same as the tests applied by the state examining boards. The main distinction lies in the fact that the medical school takes cognizance of the daily work of the student. So far as I know, no state board of examiners pays any attention to this record. In the second place, the number of state boards that give practical examinations is much smaller than it ought to be. In the majority of instances the type of test on which ability to practice medicine is based is the written examination, and it is the written examination that this discussion mainly concerns.

TESTS OF MEMORY

As at present framed, most written examinations are tests of the ability of the individuals taking them to absorb and retain large quantities of knowledge for a brief period. In other words, they are memory tests. As a result of this it is perfectly possible for an individual with a retentive memory who has graduated from an inferior medical school to pass a brilliant examination. Indeed, it is an actual fact that there have been in the past graduates of schools which were practically quiz-compend institutions who were eminently successful in passing state board examinations and obtaining licenses to practice. While the great improvements in medical colleges in recent years renders this situation no longer likely to occur, it is nevertheless still true that most state board examinations put a premium on the individual with a retentive memory and an almost bovine aptitude for regurgitation.

A TEST OF DESIRABLE QUALITIES

The purpose of this communication is to suggest a new type of written examination which will test certain of the qualities that are desirable in medical students and medical practitioners, as well as testing their knowledge. In thinking over the list of desirable qualities mentioned in the early part of the paper, it is clear that

not all of them can be tested by a written examination. Some of them must be tested by practical examinations, and can be tested only in that way. This is true particularly of the power of observation and the ability to put through various laboratory tests. There remain, after excluding the qualities that can be tested only in a practical way, certain qualities that can be tested in a written examination. These are:

1. Knowledge of the technical language of medicine.
2. Ability to express ideas graphically.
3. Ability to interpret ideas presented in graphic form.
4. Critical ability.
5. Ability to reason from facts.
6. Ability to present a subject in clear language.

METHOD OF APPLYING TESTS

The method of applying these different tests may be briefly described in order to indicate the practicability of such a written examination:

1. The test of ability to understand the technical language of medicine is obvious. It consists in presenting the student with a list of technical medical terms, beginning with easy terms and ending with the most difficult and requiring the student to define them.

2. The test of the students' ability to express ideas graphically may be illustrated by the following question recently asked in an examination of this sort:

Draw a diagram illustrating the relationship existing between diseases of the bile passages and diseases of the pancreas. Letter and legend the diagram so as to convey your ideas.

3. The question covering the ability to interpret ideas graphically presented would vary in form according to the subject of the examination. In the case of a clinical subject, a record like a temperature chart could be presented with the request that the student describe and interpret the chart.

4. The test of critical ability consists in presenting to the student a brief quotation from some magazine article, preferably a quotation that contains both truth and fallacy. In this way the student is put in a position in which he must pass judgment on the validity of the statement. It is interesting to note in practice how quickly the individual whose tendency is to hedge can be separated from the students who have real critical ability.

5. The ability to reason from facts is one that is, of course, constantly used both in laboratory and in clinical work, and can best be tested by a method allied to that popularized by Cabot under the name of "case teaching." The student is presented

with a history of an actual case, together with the more important clinical and laboratory findings, and is requested to draw his conclusions as to the nature of the case, giving his reasons.

6. Ability to present his ideas in clear language can be judged by a careful reading of the preceding questions. It is not necessary, of course, to have a special question for this purpose. Ability to spell correctly should perhaps be included as part of the test.

RATING OF QUALITIES

It goes without saying that the different qualities tested in this examination are not all of equal importance and should not all be rated equally. The rating that I have tentatively adopted is as follows:

- Knowledge of the technical language, 10 points.
- Ability to present ideas graphically, 10 points.
- Ability to interpret ideas presented graphically, 10 points.
- Ability to write clear English, 10 points.
- Critical ability, 30 points.
- Ability to reason from facts, 30 points.

The preparation of an examination of this kind, of course, requires more care and involves more expenditure of time than the preparation of the ordinary type of written examination. Any average practitioner can sit down with a textbook and prepare an examination of the ordinary type in a very short time. The extra expenditure of time is, however, compensated for by the much more satisfactory results obtained by the quality tests.

It is very interesting to observe the effect of such an examination on the rating of the students in a given class, as contrasted with the ratings under the old type of examination. The results at once make clear why it is that some men who, during their student career, do not appear to possess more than average ability, during their career as practitioners achieve a degree of success much greater than their teachers expected. A test of this sort shows that some of the most brilliant parrots in a class possess no critical faculty, and that their power of reasoning from facts may be decidedly mediocre. On the other hand, a man who has little capacity for memorizing may in an examination of this sort prove to have excellent critical faculty and a logical mind capable of drawing correct conclusions from the facts presented.

It may be pointed out that this type of examination is applicable to any subject. Each subject has, of course, its own technical language in addition to the common language of medicine. Each subject has aspects that can be graphically presented. The literature of each subject must of necessity be subjected to critical analysis, and the facts in connection with each subject must be interpreted after they have been elicited.

CONCLUSION

It is freely acknowledged that the ideas contained in this paper are not original. This is merely an attempt to work out a practical method along lines which have been suggested by the psychologists and have actually been in use in technical schools. Nor is it claimed that the plan suggested is anything more than a beginning. It is quite possible that I have entirely overlooked certain qualities that might be tested in this way, and it is more than likely that the method can be brought to a much higher degree of perfection. My main purpose in this paper is to emphasize the fact that no one kind of test is sufficient to provide a fair basis for the graduation or licensing of physicians, that the daily work of the individual should be taken into account even by state boards of examiners, that practical examinations are absolutely essential, and that the present type of written examination puts a premium on a type of mind that is not particularly desirable in medicine, and is a test of memory rather than a test of desirable qualities. Actual experience with the type of written examination suggested shows that the plan is entirely feasible and that it fulfils the purpose for which it was designed.

COOPERATION IN EXAMINATIONS BY THE NATIONAL BOARD OF MEDICAL EXAMINERS, STATE LICENSING BOARDS, AND THE MEDICAL SCHOOLS *

JOHN S. RODMAN, M.D.

Secretary, National Board of Medical Examiners

PHILADELPHIA

Inasmuch as the advisability of coördinating the examinations of the National Board of Medical Examiners, State Licensing Boards and Medical Schools has been discussed, it seems fitting now to make a report to you of the National Board's work. The plan of organization of the National Board was outlined to you by the founder of the Board in 1916, and the material progress made by the Board during the first two years of its existence was reported by Dr. Isadore Dyer, at your last two meetings. That this Board bids fair to realize the ideals underlying its creation seems now to be reasonably assured, thanks primarily to the growing broad-minded support of the State Boards and to the material assistance of the Carnegie Foundation, and the self-sacrificing work of its members.

During the past three years the Board has sought to develop an ideal plan of examination to determine the fitness of a candidate, with certain preliminary and medical requirements, to practice medicine. In doing so the Board has sought after principles to govern its future action rather than the examination of a large group of applicants. Indeed, as was predicted by the founder of the Board, the examination has proven itself more adapted to the exceptional, than to the average applicant. We believe this is due to the preliminary and medical requirements as much as to the individual ability of the candidate, for a summary of the results of the Board's examinations to date will demonstrate that the majority, having had those requirements, have passed the examination.

These preliminary and medical requirements, however, are no higher than those demanded by at least twelve of the State Boards, namely: graduation from a four-year high-school course, two years of acceptable college work, including one year of chemistry, physics, biology and a modern foreign language, graduation from a "Class A" medical school and one year of internship in an acceptable hospital. These standards are not as yet universally enforced. Were this done, our future graduates would be better prepared for the increasingly difficult practice of medicine.

* Read at the Joint Meeting with the Federation of State Medical Boards.

The Board has gained considerable experience in examination methods. A brief summary of the examinations held to date is as follows: Six examinations have been held altogether in the following places, respectively: Washington, 2; Chicago and New York, 2; Fort Oglethorpe and Fort Riley, 1. The last examination held in Chicago and New York was a simultaneous examination, as well as those held at Fort Oglethorpe and Fort Riley. Each of these, therefore, is counted as one examination. At these six examinations 109 qualified candidates have appeared, of which eighty-eight have successfully passed, a percentage of 80. Certain deductions from this experience seems warranted at this time. It has been the Board's purpose to make this examination, first of all, above reproach as a test to determine a candidate's fitness in as practical a way as possible, realizing that modern methods of medical teaching rightly accentuate training rather than teaching. A candidate, therefore, must in addition to a written test be given a chance to show what he can do at the bedside and in the laboratory. The Board's experience has clearly shown the value of such a method of examining, in fact, it is the clear conviction of its members that a clinical or laboratory examination is more valuable than the written test.

In arranging the schedule for the next examination, which will be held in Philadelphia, from June 2nd to 7th, inclusive, and of which a printed copy has been distributed, you will note that the tendency is to shorten the examination and to make it even more clinical than heretofore. Stress has been laid upon the clinical subjects and the examinations in the fundamental branches, as anatomy, physiology, pathology and chemistry, will bear directly upon the application of these sciences to the actual practice of medicine. You will note that in anatomy the subject-matter examined upon will be largely applied anatomy; the questions asked will be intimately concerned with actual practice and not the highly important but purely academic questions asked of those who have just completed a course of physiology in the medical school. The pathology examination will cover the pathology of the more important diseases both gross and microscopic and also the recognition of specimens which one is apt to meet with in the operating room. In chemistry, a new departure is made in combining the examination with clinical microscopy and making it entirely laboratory. The examination in obstetrics has been changed to a shorter written and combined with a practical on the manikin. As will be readily realized, a clinical examination in obstetrics is hardly possible owing to the danger of infection. Medical Jurisprudence has been combined with the written examination in medicine. To summarize, then, as the examination now stands, the principal subjects, medicine and surgery, each have three divisions, written, bedside, and laboratory, with a value of

200 each of a total of 1,000; anatomy, physiology, bacteriology and obstetrics, each a written and practical. Physiological chemistry, laboratory only, while materia medica, pharmacology and therapeutics, hygiene and Medical Jurisprudence have a written only. As you will see, these subjects have been arranged so that the entire examination covers a period of six days, each day being divided into two examination periods, of three hours each, and the subjects grouped so as to appear in logical sequence.

The Board has tried to steer between technicality on the one hand and laxity on the other. It has been confronted with not only the desire but the necessity of giving an examination of sufficiently high standard as to be recognized as above reproach by the State Examining Boards and yet not to make this standard so high that a qualified candidate has not a reasonable chance of passing. Figures will show that the latter aim has been accomplished, since 80 per cent. of those who took the examination have received certificates and the Board hopes that the former, the State Board's approval, is being realized, based on the comments of those State representatives whom it has been the pleasure of the Board to welcome at its examination. The Board has endeavored to bear in mind constantly that its function was to determine the fitness of a candidate to practice up-to-date medicine, rather than to pass upon the special knowledge of a candidate in any one specialty.

As time goes on this Board may find itself in a position to offer suggestions even to our leading medical schools as to their particular method of teaching certain subjects. Because of the short space of time during which the National Board has been in actual operation it is not altogether fitting that this be done at present. Even this short experience has clearly shown, however, that the Board's candidates, graduates as they have been of some of our leading medical schools, are not taught in certain subjects as well as in others. The Board's experience has shown that hygiene and bacteriology, are almost universally poorly taught and that such fundamentals as anatomy and physiology are not being taught in a modern way. The Board feels that there is still the tendency to make the fundamentals separate academic sciences instead of applied sciences as they should be. The laboratory should be the handmaiden of the clinic and laboratory methods, in so far as the candidate for licensure to practice is concerned, should be used as an adjunct to actual practice. In a general way this may be said to be true of anatomy, pathology, physiology, chemistry and clinical laboratory and hygiene.

The plan of a simultaneous examination in two places has been tried on two occasions, the first at the Military Camps, Fort Oglethorpe and Fort Riley, April 8 to 25, 1918, and the second at Chicago and New York, December 2 to 19, 1918. Judging from

these experiences the Board feels that for the present it is not wise to hold further simultaneous examinations. The difficulties involved are considerable; the examiners and candidates are forced to sacrifice an undue amount of time, as the examinations are necessarily spread over too great a length of time.

The interesting suggestion which came from the Dean of one of our leading medical schools, to combine the examination of the National Board and the final examination of the medical schools, was carefully considered. Under this plan it was proposed that the National Board's examination might be accepted by the school in lieu of its own final examination. After careful consideration the Board decided that while the plan had many merits that this was hardly the field which the National Board had been created to enter. The final examination of the medical school leading as it does to a degree, must be more or less academic in character, while that of the National Board must determine the ability of the candidate, once having received the degree, to apply his knowledge to actual practice. Furthermore, the Board requires a year of hospital work as interne after graduation, as a prerequisite to candidature for the examination.

The National Board has been much gratified by the support of many of the State Boards and hopes by maintaining the standard it has set for itself, to each year merit and secure the recognition of others. Colorado, Delaware, Florida, Georgia, Idaho, Iowa, Kentucky, Maryland, North Carolina, New Hampshire, North Dakota, Pennsylvania, Rhode Island, and Vermont. The Boards of the following States, Alabama, Arkansas, California, Illinois, Indiana, Louisiana, Massachusetts, Michigan, Minnesota, Nebraska, New Jersey, New York, Ohio, Oklahoma, South Dakota, Virginia and West Virginia, have expressed their willingness to recognize its certificate as soon as certain minor legal difficulties can be arranged. Such coöperation and friendly interest is encouraging.

It has been a pleasure to welcome to the Board's examination several of the representatives of State Boards of Examiners; Dr. Beverly D. Harison, of Michigan, Dr. Thomas McDavitt, of Minnesota, and Dr. W. J. Denno, of New York, are some of those who have witnessed the Board's examination and it has been gratifying to hear their approval and a profit to receive their suggestions. The National Board's examinations are always open to representatives of the State Boards, as well as to any others who may be interested. The Board earnestly hopes that in the future more representatives of the State Boards will find it convenient to attend its examinations.

The National Board hopes to have foreign recognition of its work in the near future. Toward this end a beginning has been made in the visit of the Registrar of the Dominion Council of

Canada, Dr. R. W. Powell, to the Board's examination held in New York, January 9 to 17, 1918. Feeling that Canada is such a near neighbor and that the standards of medical education are high there, especially since the creation of the Dominion Council, the National Board was gratified not only to welcome Dr. Powell as its guest but to learn by letter from him that he heartily approved of the methods of examination practiced by the National Board. He offered several valuable suggestions which have since been followed.

Colonel Derclé, the official representative of the French Army Corps Medical Service in this country, has been an invited guest of the Board at two of its examinations during the past year. He showed great interest in the examination and has promised to secure the interest of French licensing bodies.

In taking you into its confidence and in unfolding to you its plans for the present and hopes for the future, the National Board knows that it comes to those most interested and from whom it most desires to secure support.

DISCUSSION ON PAPERS OF DRS. BLUMER AND RODMAN

DR. JOHN M. DODSON, CHICAGO: It is hardly necessary at this time, I take it, to argue before this body the extreme importance and desirability of having some examination which can be taken by the young man entering the profession of medicine, which will insure him for all time the right to practice anywhere in this nation, at least without the distressing embarrassment of finding himself in middle life, or later, obliged to move from one state to another and to submit to a technical examination in branches from the study of which he has long been removed and which acts as an effectual barrier to his removal.

Those of us who have had to do with the administration of medical schools know the instances of hardships imposed by our impossible system of state licensure without reciprocity. Such instances of hardships have been forcibly brought to our attention, and one of the worst features of this reciprocity arrangement has been the ridiculous "I will if you will" attitude of the various boards. I could not better emphasize this than by relating an instance which has recently been brought to our attention in Chicago.

To make that clear, I shall have to go to back a few years, perhaps ten years ago, when it was discovered that one of the states in the Union, not far removed from where we are, examined in one year one-sixth of all men examined for licensure in the United States. Nobody supposed for a moment that one-sixth of the men entering the practice of medicine in that year expected to practice in that state, and the Examining Boards awoke to the fact that young men were going into that state because they thought the examinations were easy, and then returning to the state whence they came and getting licenses by reciprocity. So they put a stop to that practice by adopting the rule that no license would be granted by reciprocity to the practitioner of another state until he had practiced at least one year in the state where he secured his original license as a guarantee of good faith. The officials of the first board concerned were

apparently very wrathful at this. I know of no other reason for their action. They came back with the ruling demanding two years of practice, and so a student in that particular state could not get a license unless he had been two years in practice in other states.

Within two months one of the graduates of the school with which I am connected, and an experienced graduate from another school, was offered a desirable position with an industrial concern in a neighboring state. He had been in practice in the city of Chicago since he got his license,—for eighteen months. The board of the state to which he was to remove has the usual rule of one year, but it says “we cannot accept a man unless he has been at least two years in practice in that state” because they require that two years also; that if they would withdraw their rule of two years and make it one, we could admit this man, and the other state stood “pat,” so the young man had no right to move to that state. He was willing to take the examination, but there were no examinations to be held for four months. He could not practice until after four months had elapsed. He was thus debarred from the opportunity of taking this desirable position because of this ridiculous attitude on the part of the state board. That is one of a great many instances just as absurd, and it is working a more serious hardship in many instances.

I think we all agree there is no hope of universal reciprocity. I do not think we desire it. With the wide divergence of standards in state boards of forty-eight states, made necessary in degree and differences in conditions, with a changing personnel of members from year to year, we should not gain if we had universal reciprocity, and so for my part I can see no solution of this difficulty except through the medium of some agency like the National Board of Medical Examiners, and its very gratifying progress in the last two or three years in the direction of a better character of examinations entirely commands my confidence. I do hope to see the time when the acceptance of its certificates will be universal in this country and when the earnest young man desiring of securing a license to go anywhere may obtain it as he can now at a minimal expense and with little trouble.

When the National Board was first organized and held its first examinations, I thought it was feeling its way. At any rate, it did not command the confidence of many members who were engaged in medical education. Its examinations were conducted by men who were not experts in the particular lines in which they were examiners, just as state board examinations have been conducted. Now, I submit, gentlemen, that the business of examining men to test their fitness to practice medicine is an expert's job. I do not know of anything requiring more expert knowledge, and I do not believe that the average practitioner of obstetrics is qualified to examine a man in anatomy, or the practitioner of surgery, far removed from his student days, is properly qualified to examine students in physiological chemistry or physiology. Fortunately, many of our state Medical Practice Acts preclude by statutes from the business of examining men only men who are properly fitted to do it, and those men who are doing teaching daily in these other branches. This National Board has now very wisely enlisted the services of experts in these several lines and are holding examinations in the larger centers where it can be done without difficulty. When this was done the character of the examination was at once elevated onto a plane which com-

manded the confidence and respect of those who are engaged in medical education.

Then, they have brought these examinations to the student, and this is absolutely essential if we expect any considerable number of our students to take these examinations. They cannot afford to travel several hundred miles at an expense of \$100.00 or \$150.00. They were, perhaps, without funds when they got through the medical course, and we cannot expect them to go to the additional expense to take an examination whose value it is not easy to make clear. I think the examinations ought to be held in a dozen different centers in the United States, and I hope the board will find it possible to return to the plan of holding three or four simultaneous examinations in different cities, for it will be necessary to do that if the examinations are to be held when the students can take them. It is difficult to get the interest of these young men after they have left the hospital and are scattered to the several places where they are going to practice. I would like to see that plan of combining the examinations with those of the schools and possibly with state boards in certain cases as it has seemed to me entirely feasible.

I should dissent entirely from the opinion expressed by Dr. Rodman that the examinations given by the faculty of the college ought to be in any sense of the word different from the examinations given by this board. What is the college doing? It is conferring a degree which is evidence of fitness to practice medicine. That is all. The examination ought to be of a character to test a man's fitness to practice medicine. Men's ideas of fitness may vary. It does not simply mean technical ability, but a comprehensive and thorough knowledge of the general field of medicine with all of the branches represented. It means still more—ability of a young man to use his faculties in these lines, well trained faculties, and it means technical skill in the art of medicine, in the ability to examine patients by the various methods and to make diagnoses as tested in these practical examinations. I cannot see any reason in the world why the faculty of the college should give examinations in any sense of the word different in character from those given by the National Board.

It is true the Board requires a year's internship as a prerequisite for a final examination. The college gives an examination at the end of the fourth year for a degree, the diploma not being conferred until the end of the fifth year. It seems to me, it would be most desirable if the National Board, sitting in a city like Chicago, if you please, could fix a time, say about the end of the fourth year, when the student who has finished that fourth year, could go from a written examination testing a man's ability on the general contents of the subject, or, if you please, to a practical examination to establish the relation of those things which the young man has already mastered before he goes into a hospital; that to be followed a year later by the remainder of the examination when a student has had a practical training in a hospital. If this could be done, the Board would secure a large number of candidates.

Of one thing I am sure, if the Board expects to secure any more than a handful of candidates out of the twenty-five hundred or three thousand graduates that come out from our schools every year, it must adopt some such plan, for we must do something to do away with the multiplicity of examinations.

I was relating to some of my friends a few moments ago a little anecdote which happened in our institution some years ago. One of our professors used to hold an examination every month, and some of us felt that it was a little unfortunate because for five or six days before examination we could not get out of the students anything in the branches we were studying, and one of our men, a man keen and witty, a member of the faculty, looked into the amphitheater where the boys were sitting and coaching for an examination, and said, "pulling them up by the roots to see if they were growing." We pulled up these boys to see if they were growing.

Here is what happened in my own school: Two years ago we held final examinations in the winter quarter for a large group who had finished at the time. These examinations extend over a period of six weeks and involve eight written examinations, and eight practical examinations. At the same time, they had to take the state board examination in order to qualify for licensure so they could accept internships. That took two days. They had to take the Cook County Hospital examinations, as internships in that hospital are one of the most desirable we have here, and that took three or four days. They could not all be sure of Cook County internships. The Cook County Hospital could only take perhaps twenty out of fifty or seventy that passed. To make sure of getting a hospital internship some of these students took four or five other examinations in the same quarter. This was wholly unnecessary and a killing process. One test, such as the National Board of Medical Examiners is now giving, of a written and practical character, would have sufficed better for all of these purposes than a whole lot of them sufficed for any one of them and would have been all that was necessary.

We have seriously contemplated asking the several hospitals in Chicago that hold examinations of this sort to agree on some single examination which would test all the students that were seeking a hospital position, the students thereafter being given the privilege of selecting the internships they desire, each hospital board reserving the right to reject any man they did not feel was suited for the place. We must minimize the number of examinations, and what we want is not more examinations but better examinations.

In this particular quarter I spoke of, there was no anatomic work done. The students had no time left for study, except the rigid cramming for these examinations, and were all of the written type, every one of them. Not a single one of them tested the student's ability to do the things he is expected to do after he graduates. I would urge, therefore, upon the National Board of Medical Examiners that they reconsider this matter; they at least confer with the officials of other medical schools. For instance, suppose an examination was being held here now by the National Board of Medical Examiners, I am sure that fifty or seventy of the eighty-five or ninety students who are to finish their courses this year would have gladly taken the examinations of that Board, and members of our faculty being invited to assist in it, we would have gladly accepted. That test is equal to any test we can impose, and it would have been perfectly satisfactory for our purpose. I cannot see why the Illinois Board, which is now holding an examination at the County Hospital for state licensure, could not also have been represented in this general examination and accepted the results from every one of these candidates as entirely sufficient for its purpose. I believe that is a per-

fectly feasible proposition, and if we can bring it about, believe me we shall have the thanks and the praise and blessings of every one of these poor medical students.

DR. B. D. HARISON, Detroit, Mich.: I presume we are discussing the work of the National Board of Medical Examiners. When the National Board of Medical Examiners was first thought of, the question arose whether under the police power state boards could recognize its certificates. Several attorneys-general, among them the attorneys-general in the states of Ohio, Illinois and Michigan, gave the Board the specific opinion that state boards had not the power to recognize the National Board certificate in place of its own examination. To my mind that is a minor point. The strong point in the National Board of Medical Examiners is the educational feature, the demonstration which they have been able to make, and which is the most valuable feature of all. The fact that a man who possesses the certificate of the National Board will have to pass some kind of examination in the state, is a matter of little importance to the candidate himself. The law is to a large extent theoretical. This Board, as I understand the opinion from several boards, cannot list the national certificate as a credential, but that does not altogether limit the Board, even contrary to the expressed opinion of attorneys-general on theoretical points.

It seems to me that it would be very foolish, when a candidate has a certificate of this kind and goes into a state, for one of the members of the board of that state, who admits the qualifications of the candidate and the standard of examination is far superior to that which is provided by the state, to put the candidate through the whole formula of passing another examination. I think other methods than that may be used. In fact, I am quite sure of it. So, in effect, the certificate of the National Board can be recognized in all states. A great many states have already recognized it. I do not think anybody would be sufficiently interested in a case of this kind to bring suit against the board to prevent its recognition. There would be nothing in it for the man who brought the suit; he could not help himself or anybody else. It would not be a proper proposition to prevent satisfactory qualifications which we recognize as universal.

One of our presidents said that anything was good that was constitutional, and Dr. Baldy said something of the kind in a different way. If I remember rightly, he said with regard to the attorney-general's opinion, "To hell with the opinion of the attorney-general." He did not care about it when it came to the recognition of certificates of the National Board. Most of us try to do what is proper. The national certificate will be quite generally recognized in the future.

There is another thing which the National Board can do. One of the great weaknesses of the Board is its administration, particularly in the administration and evaluation of credits, particularly established credits. If the Board could conduct a post-graduate school on methods of administration, I think they could raise the standard to a very large degree. As I understand the proposition now, very few of the state medical boards administer their preliminary requirements. They do not seem to know how, but there is more imperfection in the administration of preliminary credits than any other administrative policy. It is a profession in itself, and there should be uniformity in administrative methods in regard to that. It would do a tremendous amount of good.

I had the privilege of attending an examination of the National Board in New York a year ago, and I must say from my experience there the examination is ideal. I do not know of any examination that is so thorough and yet so fair, and any graduate of a first class medical college should be able to pass this examination. Of course, the lower members of the class could not pass it, but the higher members of the class would without question be able to pass it. I was much pleased with the examination itself, and I think it is a matter of education for board members to see these examinations because they seem to be ideal. We hope the National Board will meet with every success because we think that their work shows that they deserve it.

DR. ISADORE DYER, New Orleans: I believe that the question of cooperation of the National Board with the examinations of students graduated from medical schools, examinations for internships, and in cooperation with state boards, is one which can hardly be undertaken at this time, while for some time in the future it probably could not be made practicable. The purposes of the National Board of Medical Examiners should be reviewed.

When this board was created, it was intended to offer an examination which should be more or less academic, which should test the exceptionally qualified candidate, and which should certify him to any one who might be concerned that the Board had found that particular candidate qualified to practice medicine.

In establishing the preliminary requirement the Board demanded graduation from an acceptable high school; two years of college work, which would include the sciences required by Class A schools and by the Council on Medical Education in its submitted requirements; graduation from a Class A school and an internship in an acceptable or approved hospital. In other words, in order for the candidate to come before that Board as an applicant for its certificate, he must have had all of the requirements of graduation from a medical school and an internship added.

It has not been the intention of the Board to consider any other examination than that which has been set forth. The Board is—and I think I speak for the Board—interested in the general problem of medical education. It has assumed no attitude of leading in the problems which are before this body, the American Medical Association, and the Federation of State Medical Boards. The National Board is glad to see that it has taken a place in the consideration of the problems which will arise and are arising.

I think that each member of the Board, and I speak for myself now, realizes that the organization of the state boards themselves is far from complete. However, a great deal has been accomplished in the last three or four years. The state boards have not yet standardized their own examinations; as a matter of fact, all of the states in the United States have not yet come into membership in the Federation of State Medical Boards. It would be an assumption on the part of the National Board of Medical Examiners to hold an examination qualifying for state boards or for any state board unless the initiative in this regard came from them. It would be a further assumption on the part of the National Board to presume to qualify for states in which the National Board itself has not yet been recognized.

I think it has been gratifying to all of us to find the reception of the National Board at these several meetings one of such earnest endorsement, and particularly from the last speaker, who I think has been a critic of the Board until it has assumed its present usefulness. In the future the National Board might, by extending its membership to a larger personnel, extend its usefulness; it could undertake a sort of qualifying preliminary examination which has been suggested by Dr. Dodson. The conjoined Board in England does it. They hold a preliminary or qualifying examination which takes up the fundamental subjects, and later give a final examination which, if passed satisfactorily, makes the successful candidate a Fellow in the Royal College of Surgeons or Royal College of Physicians.

The National Board of Medical Examiners has limited its function until now to an examination which aims at certifying the successful candidate to practice medicine, and unless the hospitals which desire interns, unless the colleges believe that the National Board will hold an examination which will satisfy them, and unless the state boards themselves should present the matter to the Board for its consideration, I believe that it should not step from its present attitude with regard to medical education and of qualification for practice until such time as the initiative on the part of yourselves and others interested should be sufficient to encourage the Board to undertake such a problem and such a proposition without feeling that it would be criticised unduly.

DR. THOMAS MCDAVITT, St. Paul, Minn.: The unanimity of feeling of these delegates is not increased by iteration and reiteration of the only argument that can be used in reference to standardization. I trust this Federation will assume some sort of responsibility in making a standard and in defining it. We are constantly talking about standardizing things, but if we could just standardize standardization it would be a good thing for all these bodies.

I had the great pleasure of hearing Dr. Rodman's revered father take this matter up when he was beginning the formation of this National Board. I think it was a very unfortunate thing, as far as the National Board is concerned, that it could not be legalized by the National Government. That has been the weakest point in the Board. It seems that for some particular reason, either the opinion of some attorney-general or something of the kind, it was impossible for this Board to be legalized by the government. Could it have been legalized, all this future trouble would have been avoided and every state would have accepted the certificate of the Board at once. What the legal difficulty is I do not know, but it has been stated that they found they would have to make it a private matter entirely.

As far as the examinations of this National Board of Medical Examiners are concerned, they are more difficult and rigid than any I have ever attended. There is no state board that I know of that has an examination that begins to compare with it.

As far as Minnesota is concerned, unfortunately we were proud that our law was so strenuous in reference to its verbiage that we could not accept their examination; but I am very glad to say that we have had introduced into both Houses of our Legislature at the present time, and it is on the calendars of both Houses, an amendment to our law whereby our Board will be enabled to accept the examinations of the National Board on the same plane that we accept those of any other state that comes up to us by reciprocity.

I think the Dean of the Yale Medical School brought forward some points in his paper that were very good, if we could make them practical. For instance, his objection to the form of the examination of the state boards, that they do not take into consideration examinations of the medical school. I know practically any board would be more than glad to take these examinations into consideration, but the fundamental trouble is that a great mass of these men that come up for examinations do not come for three or four days before the examinations are to be held, consequently we cannot consider these matters as much as we would like to do.

MAJOR W. C. RUCKER, Newport News, Va.: In examining men one of the essential points to be borne in mind is what you are examining a man for. If you are examining him to find out whether he is a scientist in the practice of medicine, you would give him one type of examination. On the other hand, if you are going to find out whether or not he can treat sick people, you must give another type of examination. One of the principal things which determines whether the man is fit to practice medicine is the one thing that he is not examined in, and that is, his temperamental fitness to practice medicine.

What is the thing that determines a man's ability to meet these things? It is the way in which he can meet an emergency. Almost any fool can examine a patient, go home, and write up the case, and find out what to do and blunder along in that way; but it takes a good man to meet an emergency.

The United States Public Health Service a few years ago undertook to put into practice a test which would, in a measure, determine temperamental fitness, and these tests were more or less psychological. They consisted merely of three questions, giving the man one at a time, each question or story describing a certain emergency, not an emergency which requires great medical skill but just ordinary skill. This man's story was so told that an environment was created in his mind, and then some man was set to work to write out what he would do in that emergency, and it is surprising the number of men who were immediately weeded out on a test of that kind. It may seem like a digression, but I think there is a practical point in it, and I would like to crave your indulgence to tell you how to examine rat catchers because it has a practical bearing.

It has been my business in these campaigns to be the hired man. I had to examine men to see whether or not they would make good rat catchers. I had to determine their physical conditions, their habits, whether they were lazy or not, and whether or not they had any skill, and the scheme which I evolved was this: I had a man come before me; I looked over what he did before, and then I said to him, "There is a difference in your palms." That is an important point. I kept looking at his hands, not at the man's face, because that would not be fair to him. I asked him questions and gave orders. One of the things I did was to ask him to turn his hands over. Did he respond quickly or did he respond sluggishly? I got an opportunity to see whether his hands were calloused. The man had said he was a mechanic. You can tell by the hands and fingers whether he is a mechanic or not. I would weed out the kind of men who had tremors, the alcoholic, as well as I could weed out the tubercular and nervous type of men. And here, again, you get a great deal of information by studying a man's hand and watching

his reaction when you put questions to him. That is a practical thing, and it is that sort of thing we should examine men for as physicians. I examine men for rat catchers and you examine men also to determine whether or not they are cultured human beings. Rat catching is very important when we have to deal with bubonic plague.

DR. JAMES EWING, New York City: I think Dr. Rucker raised an important question because the sole mission of the National Board of Medical Examiners is to examine only practitioners of medicine. I understood Dr. Dyer to say that the object of the Board was to gather from among the recent graduates the specially qualified men most of whom, it may be assumed, are going into the practice of medicine, but whether all of them could pass the examination or not was a question.

I had the opportunity to take part in some of the examinations of the Board in New York, and I can bear witness to the great service and skill with which these gentlemen conducted their work and their uniform courtesy. The experience of passing through an examination held by the National Board of Medical Examiners is a liberal education in itself, and I think the activities of this Board are such that they are doing a great deal to maintain and even raise the standard of medical education in this country, and on that account I am particularly anxious that their ideas, while theoretical, shall be carried out because their philosophy is entirely sound.

Dr. Rodman stated that they had detected on the part of some of the better schools a tendency to ignore the pure sciences without sufficient attention given to the practice of medicine. This raises the point I am driving at. We have got to admit that medicine is the mother of the sciences. The history of science shows that to be a fact.

Up to the time of the war in Europe, the medical schools provided a very considerable number of men who entered the other sciences and became prominent in them; but in this country the medical schools did not provide enough men to teach the sciences to medical students. I am told that there is not a single prominent teacher in anatomy in this country who holds a medical degree. Some of them have honorary degrees. Very much the same situation exists with regard to physiology. Medical schools have not provided sufficient men to teach their own men the fundamental sciences of medicine. If Dr. Rodman and the National Board have discovered in some of the better schools a tendency to teach these sciences for their own sake, I question whether that can be used against the better medical schools. I suppose he discovered in some papers that some of the boys were better posted on some of the sciences than in some of the practical questions. I should say that is a sign of sound training and something we should encourage because somehow we have got to have enough men to teach medical science. We must emphasize medical science in the curriculum, otherwise we go to biological schools and continue to provide men who have not had a medical training in the chairs of anatomy and physiology. That is what we are doing now.

It seems to me, that there ought to be recognition of the necessity of training certain men who should not be prevented from holding a degree granted by the Board because they are not going to practice medicine. Very few men who eventually become teachers of the science of medicine in any department determine to be so while medical students. They want the right to practice medicine, especially qualified men, and who

are especially qualified to become teachers of medicine. A few want to have this certificate of the National Board. The National Board should get these men in the list of candidates.

Perhaps Dr. Rucker holds the view that the thing to do is to provide different types of examinations. That I doubt. The examinations should be one and the same, and I do not believe the National Board assumes that because some of the better schools have placed particular emphasis on the medical sciences the matter should be criticised. It should be encouraged.

DR. JOHN M. DODSON, Chicago: I should like to go further than Dr. Ewing has done in his dissent from the views suggested by Dr. Rucker. There is no difference in the character of training or the character of the examination. Only scientific men should teach anatomy, physiology, or any of the other branches of the practice of medicine, unless you want rat catchers and carpenters and blacksmiths at the bedside. I do not know of any higher difficult type of investigation than the work of the doctor at the bedside. Unless he is grounded in these fundamental sciences in such a broad comprehensive way that he can grow from year to year and keep pace with them, he is not a fit practitioner. Thank God, we have gotten away from the old idea that medicine is nothing but an art in which the quack doctor plies his trade like the carpenter and conforms to certain technical things which have been done before. The doctor is a man who applies his knowledge to our science and the growing sciences, changing every year, to the practical problem of medicine, and there is no training more thorough, more precise, that is required in any calling than that in medicine, and to determine his efficiency we ought to provide for a thorough test of knowledge of these things in that way.

DR. JOSEPH BYRNE, New York City: Dr. Dodson stated that the physician should be a scientific man and specialist as an examiner for the National Board. As a matter of fact, what way is our teaching going on in the fundamental sciences, and what are the needs of the student? Are we training him to be a pure scientist? He has not had time for that. We are training him to be a technologist; that is, a man who is conversant with the general trend of a scientific subject, and who knows enough about the subject to be able to apply the principles of that science to the cure of sickness and the relief of suffering.

Now comes in the specialist or the highly trained man in anatomy who is not familiar with physiology, and there are such anatomists. He does not understand the thorough application of the fundamental sciences to the clinical side of medicine; he is incompetent to examine into a man's knowledge of anatomy. He does not know the practical side of his own art. The real examination is the practical examination.

MAJOR W. C. RUCKER: There has been a misunderstanding of what I have said. I merely stated that a man could be examined for what he is supposed to do. It is very essential to know what he is going to do in a scientific way and what he is capable of doing. After all is said and done, you are examining doctors to be doctors, and not to be professors of anatomy. I would not disagree with those who believe in men having a scientific training, but after all, a man must apply what he knows.

DR. BLUMER (closing on his part): I want to emphasize what Dr. Dodson said a great deal better than I can say it. I do not like to hear anybody intimate or suggest that there is any conflict between scientific men and practical men. A great deal of the advance in medicine in the future lies in the hands of the general practitioner. When you think about it, those who are teaching in medical schools and are doing our teaching in hospitals are mainly seeing the end results of disease. We see the thing when it is all over, and one of the most important problems before the medical profession at the present time is the recognition of the early stages of the chronic diseases, the so-called degenerative diseases particularly, that attack us in middle life and, according to life insurance companies, attack us much more vigorously and prevalently in this country than in Europe. The recognition of the early stages of chronic diseases, like arterio-sclerosis, chronic Bright's disease, and diseases of that type, has got to come from the general practitioner. We cannot discover them. Those who are in hospitals and seeing nothing but the end results of disease must do this, and so it is up to the general practitioner, and for that reason, there never was a time when the general profession of this country is more in need of thorough training in the methods of medicine, and that does not prevent them from being practical men.

DR. RODMAN (closing): The reason for creating the National Board of Medical Examiners was to give an examination and to certify men for practice anywhere in the country. If the National Board can accomplish other things at the same time, it certainly will be glad to do so, but its chief function is that which I have mentioned.

As to the legal difficulty of the Board which was mentioned by Dr. McDavitt, it would be nice if this Board at the present time could have legal backing, but there is one legal difficulty in the way of this, and that is the tenth amendment to the Constitution of the United States.

MINUTES OF THE TWENTY-NINTH ANNUAL MEETING, HELD
AT CHICAGO, MARCH 4, 1919.

MORNING SESSION

In the absence of both the president and the vice-president, the meeting was called to order by the chairman of the Executive Council, Dr. W. S. Carter, at 9:30 a. m., in the Hotel La Salle.

The secretary announced that the president, Dr. W. J. Means, had been obliged to return home because of illness, therefore the chairman of the Executive Council would act as temporary chairman.

Dr. Carter, assuming the chair, stated that he would entertain a motion to elect a permanent chairman for the meeting.

Dr. Wm. Pepper moved that Dr. John L. Heffron be elected to serve as chairman for the meeting. The motion was duly seconded and carried.

Dr. Heffron then took the chair.

ROLL CALL

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

University of Alabama School of Medicine.—Tucker H. Frazer.

University of Colorado School of Medicine.—Chas. N. Meader.

Yale University School of Medicine.—George Blumer.

Army Medical School.—Francis A. Winter.

George Washington University School of Medicine.—Wm. C. Borden.

University of Georgia College of Medicine.—W. D. Cutter.

Northwestern University Medical School.—C. W. Patterson.

Rush Medical College.—J. M. Dodson.

University of Illinois College of Medicine.—A. C. Eycleshymer.

Indiana University School of Medicine.—Chas. P. Emerson, B. D. Myers.

University of Iowa College of Medicine.—L. W. Dean, J. F. McClintock.

University of Louisville Medical Department.—Henry E. Tuley.

Tulane University School of Medicine.—Isadore Dyer.

University of Maryland School of Medicine; College of Physicians and Surgeons.—J. H. M. Rowland.

Tufts College Medical School.—W. E. Sullivan.

Detroit College of Medicine and Surgery.—W. H. MacCraken.

University of Michigan Medical School.—C. W. Edmunds.

- University of Minnesota Medical School.—E. P. Lyon.
 St. Louis University, School of Medicine.—H. W. Loeb.
 University of Missouri, School of Medicine.—A. Ross Hill,
 Guy L. Noyes.
 Washington University Medical School.—G. Canby Robinson
 John A. Creighton Medical College.—H. von W. Schulte.
 University of Nebraska, College of Medicine.—Irving S.
 Cutter.
 Columbia University, College of Physicians and Surgeons.—
 Samuel W. Lambert.
 Cornell University Medical College.—J. Ewing.
 Fordham University, School of Medicine.—Joseph Byrne.
 Syracuse University, College of Medicine.—John L. Heffron.
 University and Bellevue Hospital Medical College.—John H.
 Wyckoff.
 University of Buffalo Medical Department.—C. Sumner Jones.
 University of North Dakota, College of Medicine.—H. E.
 French.
 University of Cincinnati, College of Medicine.—Martin H.
 Fischer.
 Western Reserve University, School of Medicine.—C. A.
 Haman.
 Hahnemann Medical College and Hospital.—W. A. Pearson.
 University of Pennsylvania, School of Medicine.—William
 Pepper.
 Medical College, State of South Carolina.—Robert Wilson, Jr.,
 W. F. R. Phillips.
 Vanderbilt University, Medical Department.—Lucius E.
 Burch.
 Baylor University, School of Medicine.—E. H. Cary.
 University of Texas, Department of Medicine.—William S.
 Carter.
 University of Vermont, College of Medicine.—Henry C.
 Tinkham.
 Medical College of Virginia.—A. L. Gray.
 West Virginia University, School of Medicine.—John N.
 Simpson.
 Marquette University, School of Medicine.—Louis F. Jermain.

VISITORS

The following colleges not in membership in the Association
 were also represented:

University of South Dakota, College of Medicine.—C. P.
 Lommen.

Dartmouth College, School of Medicine.—Walter L. Men-
 denhall.

Loyola University, College of Medicine.—P. J. Mahan.

University of Virginia, Medical Department.—Theodore Hough.

Woman's Medical College of Pennsylvania.—Martha Tracy.

University of Toronto.—C. K. Clarke, D. J. G. Wishart.

McGill University.—G. E. Armstrong, John W. Scane.

New York Homeopathic Medical College and Flower Hospital.

—T. J. Preston, Jr.

Long Island College Hospital.—Otto V. Huffman.

Temple University, Medical School.—Frank C. Hammond.

Boston University, School of Medicine.—John P. Sutherland.

Jefferson Medical College.—Ross V. Patterson.

Ohio State University, College of Homeopathic Medicine.—

Claude A. Burrett.

University of Michigan, Homeopathic School.—G. Irving Naylor.

College of Medical Evangelists.—P. F. Mangan, E. H. Risley.

Hahnemann Medical College, Chicago.—J. C. Blake, W. S. Hastings.

OTHERS PRESENT

Council on Medical Education, American Medical Association, N. P. COLWELL, Chicago; L. A. LA GARDE and J. S. RODMAN, National Board Medical Examiners, Washington; V. E. EMMETT, WM. H. WELKER, GEO. P. DREYER, D. J. DAVIS, J. R. PENNINGTON, WM. L. NOBLE, WM. L. PUSEY, SARAH M. HOPSON, JOHN G. BOWMAN, THESLE T. JOB, HUGH N. MACKECHNIE, R. W. STRONG, E. L. MOORHEAD, FRANK C. BECHT, Chicago; THOS. McDEVITT, St. Paul; J. W. PRYOR, Lexington, Ky.; J. A. FERREE, Columbus, Ohio; C. J. MOULINIER, J. VAN DE ERVE, HENRY C. TRACY, MILWAUKEE; FRED'K FLAHERTY, Syracuse, N. Y.; F. C. WAITE and H. T. KARSNER, Cleveland; A. D. DUNN, Omaha; DON R. JOSEPH, St. Louis; FREDERICK TILNEY, New York City; WAYNE J. ATWELL, Buffalo; J. H. CARSTENS, Detroit; AUGUSTUS S. DOWNING, Albany; W. O. OWEN, Washington, D. C.; W. L. BEEBE, St. Cloud, Minn.; MARIE REIMER, New York City; WM. W. ROOT, Vermont; D. S. FAIRCHILD, Clinton, Iowa.

The secretary announced that the president, Dr. Means, before leaving had appointed the following committees:

Nominating Committee.—Drs. A. Ross Hill, Sam'l W. Lambert and Irving S. Cutter.

Auditing Committee.—Drs. J. F. McClintock, Henry E. Tuley and J. H. M. Rowland.

MINUTES OF THE PREVIOUS MEETING

The reading of the minutes of the previous meeting being called for, the secretary submitted the minutes as published in the volume of Transactions for 1918, pages 84-113, and, on motion, they were adopted as printed.

REPORT OF THE SECRETARY-TREASURER

The report of the secretary-treasurer being called for, Dr. Zapffe submitted the following report:

Since the last meeting of this Association much has transpired that might be embodied in a report of this kind because of the activities in the secretary's office which were engendered, yet in the very nature of things, this report must be restricted to such subjects as come strictly within its limitations.

Little need be said about the arrangements made for the present meeting. The program speaks for itself. Perhaps, it is a trifle too full for a one day session, but it was impossible to shorten it in any way without endangering the success of the meeting. Furthermore, nothing stands in the way of extending the time of meeting for another day, if the delegates wish to do so. A motion passed at the 1917 meeting provided for a two days meeting. The several changes in the date of the meeting were necessitated by the fact that effort was made to choose the time which would best meet the convenience of the Federation of State Medical Boards; the time for holding licensure examinations could not well be changed. The matter was submitted to the colleges for a vote.

At the last meeting the secretary was authorized to resume the publication of the official Bulletin. Owing to war conditions, it became necessary to defer this work. The scarcity of paper and printing facilities for work of this kind, and, especially, the increased cost of publication, prohibited taking up the project. Perhaps conditions will be more favorable during the coming year and make possible the issuance of this very much needed publication.

The delay in getting out the transactions was likewise caused by war conditions. Although all the copy was in the hands of the printer within three weeks after the meeting, several months elapsed before the volume was ready for distribution. As usual, 500 copies were printed, and nearly all of these were distributed. In this connection, your secretary wishes to ask all those who may have copies of transactions of previous years and who have no use for them, to forward these to the secretary's office so that he can supply the demands made for full sets. The stock of most of the issues has been exhausted, and the demand for them is increasing; therefore, the receipt of extra copies will be appreciated not only by the secretary but by those who make the request for them.

Pursuant to instructions, the secretary mailed to each college in membership a copy of the report of the Committee on Revision of Constitution and By-Laws, which will be considered at this meeting, and of the minutes of the special meeting held by the Executive Council in June, 1918, at the time of the meeting of the American Medical Association in this city.

The fee for membership in the National Emergency Council on Education (\$100.00) was forwarded to the secretary, Dr. Campbell, and a report on the activities of that body will be heard later from the delegate from this Association, Dr. Myers.

Two applications for membership were received during the year, one from the Woman's Medical College of Philadelphia, and one from the Medical Department of the University of Virginia, Charlottesville. Both

applications were referred to the Executive Council for further action. One application (Hahnemann Medical College, Chicago) is still pending.

The membership today numbers 61.

There is on hand, as of March first, a cash balance of \$602.93.

(Signed) FRED C. ZAPFFE, Secretary-Treasurer.

On motion, the report was received and the financial statement referred to the Auditing Committee.

REPORT OF THE EXECUTIVE COUNCIL

The report of the Executive Council was called for and was then made by the chairman of the Council, Dr. W. S. Carter.

Meetings of the Executive Council were held June 10, 1918, and March 22, 1919.

APPLICATIONS FOR MEMBERSHIP

1. The Medical Department of the University of Virginia has applied for membership in the Association. Dr. Samuel W. Lambert visited the school and made a very favorable report to the Council. The Council recommends election to membership in the Association.

2. The Woman's Medical College of Pennsylvania, Philadelphia, was visited by Dr. Samuel Lambert and Dr. Wm. Pepper, who found that it is maintaining high standards of medical education. The Council recommends that this college be elected to membership in the Association.

3. The Hahnemann Medical College of Chicago has again applied for membership. Application was made in 1918 when an inspection was made by Drs. Eycleshymer and Zapffe. At that time deficiencies were found and action on the application was deferred for one year by the Association. This college was again inspected in February, 1919, by Dr. Zapffe in conjunction with Dr. Colwell and a full report made to the Council. The Executive Council recommends that this application be rejected.

4. The Medical Department of the University of Southern California, Los Angeles, was notified in 1917 that unless certain improvements were made within one year, it would be dropped from membership.

This college was again inspected in January, 1918, when it was found that the changes suggested had not been made. At the annual meeting in February, 1918, this college was suspended from membership for one year, with the privilege of renewing its membership if the improvements suggested in former reports were made within that time. Due notice was given of the action taken by the Association, but no further communication has been received from this college. The Executive Council therefore recommends that it be dropped from membership in the Association.

A special meeting of the Executive Council was held in Chicago, June 10, 1918. The following resolutions were adopted:

The chairman of the Council, Dr. Carter in the chair.

Dr. Bardeen presented the following resolution:

WHEREAS, After several years of experimentation and study The Association of American Medical Colleges, in cooperation with the Council on Medical Education of the American Medical Association and the Association of American Universities, has arrived at a standard of minimum entrance requirements which the great majority of medical schools in this country are prepared to meet, and

WHEREAS, These requirements have recently been carefully formulated by a committee appointed for this purpose, and have been published; and

WHEREAS, It seems best for the present not to attempt further general experimentation along these lines but to focus attention on other aspects of medical education now of much greater relative importance; therefore, be it

Resolved, 1. That state boards of medical licensure be requested to adopt the minimum requirements set forth herein below, and where change in state laws is necessary to use their influence to obtain the required legislation; and

2. That the members of this Association, when asked to agree to the special requirements of any state board of licensure be requested to communicate with the Executive Council of this Association before making such agreement if the special requirements of this state board are not in substantial agreement with the standard requirements of this Association, which are as follows:

I. HIGH SCHOOL REQUIREMENTS

(a) For admission to the two-year premedical college course, students shall have completed a four-year course of at least fourteen units in a standard accredited high school or other institution of standard secondary school grade, or have the equivalent as demonstrated by examinations conducted by the College Entrance Examination Board, or by the authorized examiner of a standard college or university which has been approved by the Executive Council of the Association of American Medical Colleges. Unless all the entrance units are obtained by examination, a detailed statement of attendance at the secondary school, and a transcript of the student's work, should be kept on file by the college authorities. This evidence of actual attendance at the secondary school should be obtained, no matter whether the student is admitted to the freshman or to higher classes.

(b) Credits for admission to the premedical college course may be granted for the subjects shown in the following list and for any other subject counted by a standard accredited high school as a part of the requirements for its diploma, provided that at least eleven units must be offered in Groups I-V:

SCHEDULE OF SUBJECTS REQUIRED OR ACCEPTED FOR ENTRANCE TO THE PREMEDICAL COLLEGE COURSE

Subjects	Units*	Required
GROUP I, ENGLISH—		
Literature and composition	3-4	3
GROUP II, FOREIGN LANGUAGES—		
Latin	1-4	} 2†
Greek	1-3	
French or German	1-4	
Other foreign languages	1-4	
GROUP III, MATHEMATICS—		
Elementary algebra	1	1
Advanced algebra	½-1	..
Plane geometry	1	1
Solid geometry	½	..
Trigonometry	½	..
GROUP IV, HISTORY—		
Ancient history	½-1	} 1
Medieval and modern history	1-½	
English history	½-1	
American history	½-1	
Civil government	½-1	
GROUP V, SCIENCE—		
Botany	½-1	..
Zoology	½-1	..
Chemistry	1	..
Physics	1	..
Physiography	½-1	..
Physiology	½-1	..
Astronomy	½	..
Geology	½-1	..

GROUP VI, MISCELLANEOUS—

Agriculture	1-2	..
Bookkeeping	$\frac{1}{2}$ -1	..
Business law	$\frac{1}{2}$..
Commercial geography	$\frac{1}{2}$ -1	..
Domestic science	1-2	..
Drawing, freehand and mechanical	$\frac{1}{2}$ -2	..
Economics and economic history	$\frac{1}{2}$ -1	..
Manual training	1-2	..
Music: Appreciation or harmony	1-2	..

* A unit is the credit value of at least thirty-six weeks' work of four or five recitation periods per week, each recitation period to be not less than forty minutes. In other words, a unit represents a year's study in any subject in a secondary school constituting approximately a quarter of a full year's work. A satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than 120 sixty-minute hours, or their equivalent.

† Both of the required units of foreign language must be of the same language, but the two units may be presented in any one of the languages specified.

Of the fourteen units of high school work (fifteen after Jan. 1, 1920), eight units are required, as indicated in the foregoing schedule: the balance may be made up from any of the other subjects in the schedule.

II. PREMEDICAL COLLEGE COURSE

(c) Beginning Jan. 1, 1918, the minimum requirement for admission to acceptable medical schools, in addition to the high school work specified above, will be sixty semester hours of collegiate work, extending through two years, of thirty-two weeks each, exclusive of holidays, in a college approved by the Executive Council of the Association of American Medical Colleges. The subjects included in the two years of college work should be in accordance with the following schedule:

SCHEDULE OF SUBJECTS OF THE TWO-YEAR PREMEDICAL COLLEGE COURSE

Sixty Semester Hours* Required	
Required Subjects:	Semester Hours
Chemistry (a)	12
Physics (b)	8
Biology	8
English composition and literature (d)	6
Other nonscience subjects (e)	12
Subjects Strongly Urged:	
French or German (f)	6-12
Advanced botany or advanced zoology	3-6
Psychology	3-6
Advanced mathematics, including algebra and trigonometry	3-6
Additional courses in chemistry	3-6
Other Suggested Electives:	
English (additional), economics, history, sociology, political logic, mathematics, Latin, Greek, drawing.	

* A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be not less than fifty minutes net, at least two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

SUGGESTIONS REGARDING INDIVIDUAL SUBJECTS

(a) *Chemistry*.—Twelve semester hours required (eight until Jan. 1, 1920) of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work. In the interpretation of this rule work in qualitative analysis may be counted as general inorganic chemistry. The remaining four semester hours (required after Jan. 1, 1920) may consist of additional work in general chemistry or of work in analytic or organic chemistry.

(b) *Physics*.—Eight semester hours required, of which at least two must be laboratory work. It is urged that this course be preceded by a course in trigonometry. This requirement may be satisfied by six semester hours of college physics, of which two must be laboratory work, if preceded by a year (one unit) of high school physics.

(c) *Biology*.—Eight semester hours required, of which four must consist of laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone.

(d) *English Composition and Literature*.—The usual introductory college course of six semester hours, or its equivalent, is required.

(e) *Nonscience Subjects*.—Of the sixty semester hours required as the measurement of two years of college work, at least eighteen, including the six semester hours of English, should be in subjects other than the physical, chemical or biologic sciences.

(f) *French or German*.—A reading knowledge of one of these languages is strongly urged. If the reading knowledge in one of these languages is obtained on the basis of high school work, the student is urged to take the other language in his college course. It is not considered advisable, however, to spend more than twelve of the required sixty semester hours on foreign languages. In case a reading knowledge of one language is obtained by six semester hours of college work, another six semester hours may be well spent in taking the beginner's course in the other language; if this is followed up by a systematic reading of scientific prose, a reading knowledge of the second language may be readily acquired. When a student spends more than two years in college he may well spend twelve semester hours of his college work in the second language.

On motion of Dr. Cutter, duly seconded, this resolution was adopted unanimously.

Dr. Bardeen moved that the Executive Council approves of the matriculation of any student with conditions, but with the distinct understanding that such conditions must be removed before said student begins his work in the medical school as a regular student. However, said student shall be considered as being regularly matriculated from the time of his original registration.

This motion was seconded by Dr. Cutter and carried unanimously.

Dr. Bardeen moved, further, that the idea of setting forth the urgent need of medical men at this time be considered a worthy cause to foster.

Seconded and carried unanimously.

Dr. Bardeen moved, further, that the Executive Council approve the Surgeon-General's plan that thirty (30) weeks of teaching be considered a full year of work in case a speeding up of medical education with work extending through the summer involves this plan.

The Executive Council recommends that the standards of preliminary education suggested by the joint committee from the Association of American Medical Colleges, the Council on Medical Education of the American Medical Association, and the Association of American Universities be adopted with the following modifications:

(a) That the additional four hours in chemistry shall be in organic chemistry.

(b) That the required subjects shall be chemistry, physics, biology and English and that the amount of work in non-science subjects shall not be specified.

(c) That the elective subjects to make a total of 60 semester hours shall only include the following as strongly urged:

- (1). A modern foreign language.
- (2). Comparative vertebrate anatomy.
- (3). Psychology.

The Executive Committee recommends that the Committee on Education and Pedagogics be instructed that its work for the ensuing year be directed toward the production of monographs on the teaching of individual subjects in the curriculum with a view to subsequent publication.

It is further recommended that the committee be authorized to associate with itself specialists in each subject throughout the membership of this Association.

(Signed) W. J. MEANS.
 SAM'L W. LAMBERT.
 IRVING S. CUTTER.
 FRED C. ZAPFFE.
 W. S. CARTER.

On motion, the report of the Executive Council was received and the various items mentioned therein were considered seriatim.

The recommendation to receive into membership the Medical Department of the University of Virginia was read and, on motion, duly seconded, was concurred in by the Association.

On motion, duly seconded, the recommendation to receive into membership the Woman's Medical College of Philadelphia was endorsed, and the applicant declared elected to membership.

On motion, duly seconded, the recommendation that the application for membership of the Hahnemann Medical College of Chicago, be rejected, was concurred in.

On motion of Dr. Blumer, duly seconded, the action taken by the Executive Council at a special meeting held in June, 1918, was approved, except such action as concerned the adoption of entrance requirements. Action on this section was deferred until after the reading of the report of the Committee on Education and Pedagogics.

The recommendation of the Executive Council that during the next year the Committee on Education and Pedagogics take measures to secure the preparation of monographs on medical pedagogy was concurred in, on motion duly seconded, and the matter was ordered referred to said committee, with instructions to report at the next annual meeting.

REPORT OF COMMITTEE ON EDUCATION AND PEDAGOGICS

The report of this committee was called for and was read by the chairman, Dr. Phillips.

There have been referred to this committee, from time to time during the last four years, with directions to report thereon, the following subjects:

1. Preliminary educational requirements for admission.
2. Revision of the medical curriculum.
3. Special instruction in tuberculosis.
4. Uniformity of methods in keeping students' records.

Partial reports were made last year and the year before on the subjects of preliminary educational requirements for admission and the revision of the medical curriculum. Your committee has continued to consider these two subjects and in addition has considered the other two, namely, special instruction in tuberculosis and uniformity of methods in keeping students' records.

Owing to exigencies occasioned by the war, your committee has not been able to prepare an analytical report of its considerations, such as it otherwise should have wished to accompany and explain its recommendations. The result of its considerations it submits in the form of certain specific recommendations, trusting to develop in any discussion that may follow the reasons for any of its recommendations that do not appear sufficiently self-convincing.

The recommendations submitted are as follows:

PRELIMINARY EDUCATIONAL REQUIREMENT FOR ADMISSION

That the preparatory education for admission to the medical schools in membership in this Association be not less than that represented by:

(1). The satisfactory completion of 14 units of a standard high school, or the equivalent thereof; and that 15 units be required after 1920.

(2). The satisfactory completion of the freshman and sophomore years of a recognized collegiate institution which demands not less than 120 semester hours, on the basis of a 32 weeks session for its baccalaureate degree, and not less than 30 semester hours for the work of every year.

(3). That among the subjects included in the collegiate work presented shall be:

Chemistry: 8 semester hours, to be increased to 12 semester hours after 1920.

Physics: 6 semester hours.

Biology: 6 semester hours.

English: 6 semester hours.

(4). That courses in foreign language, psychology and comparative anatomy are recommended to be included among the electives presented, in satisfaction of the remainder of the required 30 semester hours.

(5). That in the obligatory subjects of physics, chemistry and biology the ratio of laboratory to lecture work shall be not less than one semester hour of laboratory work for every two semester hours of lecture or recitation work.

2. MEDICAL CURRICULUM

(1). That until otherwise more scientifically determined, 4,000 hours be regarded as the normal time to be taken for lecture, recitation, laboratory and clinical instruction comprehended in the curriculum of the medical school. It is recommended that no school should schedule 10 per cent. more or 15 per cent. less hours in its curriculum; and that the distribution of hours should be as equally apportioned as practicable to the four academic sessions.

(2). That till a more definite determination of the ratio of intramural work to room study be made, the following ratio be accepted as the consensus of this Association: For every one (1) hour of lecture or recitation, two (2) hours of room study; for every two (2) hours of laboratory work or clinical instruction, one (1) hour of room study. And that every school endeavor in making its schedule to so make it as to secure to the student this ratio, on a basis of a ten (10) hour study day.

(3). That every school endeavor to revise its teaching of the specialties so as to reduce the time devoted to them to the indispensable minimum, and that the time so saved be credited either to the general subjects or to elective subjects that the student may be capable and desirous of taking and which the school may be able to offer.

(4). That every school endeavor to revise the general fundamental subjects of its curriculum with the view to eliminate unnecessary duplications or repetitions; to see that, as far as practicable, wherever any such repetition or duplication occur that it be only in such parts and portions that experience indicates it is essential to duplicate or reiterate.

(5). That every school that may have the requisite facilities for offering elective work endeavor to so arrange its schedule that a limited amount of time be available for elective work in every year, and that

students be encouraged to elect some work in the subjects in which the school may be able to offer elective facilities.

(6). That the subjects, both general and subdivisional, comprising the curriculum, and the time apportioned to them be severally as follows:

DIVISION I.—Total hours, 720.

Anatomy, gross	520 hours	
Anatomy, microscopic	135 hours	730
Embryology	75 hours	

DIVISION II.—Total hours, 180.

Chemistry, organic	75 hours	
Chemistry, physiologic	105 hours	180

DIVISION III.—Total hours, 288.

Physiology	288 hours	
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DIVISION IV.—Total hours, 170.

Bacteriology	126 hours	
Immunity	22 hours	170
Sereology	22 hours	

DIVISION V.—Total hours, 350.

Pathology	270 hours	
Laboratory diagnosis	80 hours	350

DIVISION VI.—Total hours, 185.

Pharmacology	105 hours	
Materia Medica	60 hours	185
Pharmacy	20 hours	

DIVISION VII.—Total hours, 1,000.

Medicine	720 hours	
Physical diagnosis	80 hours	
Pediatrics	120 hours	1050
Nervous diseases	60 hours	
Mental diseases	30 hours	
Dermatology	40 hours	

DIVISION VIII.—Total hours, 750.

Surgery	540 hours	
Orthopedics	45 hours	
Urology	35 hours	750
Ophthalmology	50 hours	
Ear, Nose and Throat.....	50 hours	
Actinology	30 hours	

DIVISION IX.—Total hours, 245.

Obstetrics	140 hours	
Gynecology	105 hours	245

DIVISION X.—Total hours, 76.

Hygiene and Public Health.....	60 hours	
Medical Jurisprudence	16 hours	76

The time apportioned to these subjects may be varied, either increased or decreased, subject to the general recommendation relative to the total hours of the curriculum, that is, the instructive content or amount of instruction given relative to any subject may be increased 10 per cent. or decreased 15 per cent., or to any other degree within these limits.

Subjects in one division may be transferred to another division for teaching or administrative purposes.

3. SPECIFIC INSTRUCTION IN TUBERCULOSIS

That no specific specialty be made of the disease tuberculosis; that the teachers within whose several spheres of instruction the subject of tuberculosis is dealt with be left to emphasize its importance according to their own judgment and its relation to medicine and the practice of medicine.

4. UNIFORMITY OF RECORDS OF STUDENT'S WORK

That a uniform method of keeping the facts relative to the preparatory education and the medical education of students is desirable, and that the members of the Association be requested to consider the form of record herewith submitted and to advise this committee whether they be willing to adopt the form or what modification should be made in it to meet their particular requirements; also to suggest any changes or alterations that would make it more acceptable and suitable for its purpose.

5. TO IMPROVE THE WORK AND VALUE OF THE COMMITTEE ON MEDICAL EDUCATION AND PEDAGOGICS

That the recommendation of the committee made in its report of 1917 relative to the tenure of membership in this committee be adopted and made a part of the constitution. This recommendation was: "That it (the committee) would be a more useful instrumentality of the Association if the tenure of membership were increased from one year to five years and so ordered that the term of one member should expire annually."

6. AN AMENDMENT TO THE CONSTITUTION

That instead of incorporating in detail into the constitution as articles of the constitution the preparatory educational admission requirements and the medical curriculum, these subjects be specifically set forth in by-laws or standing resolutions; and that in lieu of the present article and the article proposed by the special committee on revision of the constitution the following article be adopted, namely:

ARTICLE IV. Sec. 1.—This Association shall have power to establish such educational standards, rules and regulations, governing admission to the study of medicine, the curriculum of study and the requirements for graduation as it shall deem in the interest of medical education and the purposes of this Association.

Sec. 2.—This Association shall have power also to establish such other rules and regulations it may deem necessary to further the purposes of the Association.

Sec. 3.—All educational standards and all other standards and all other rules and regulations established by this Association shall con-

NAME	COUNTY	CITY OR TOWN	STREET	NUMBER
HOME ADDRESS—STATE	ADDRESS	ADDRESS		
FATHER'S NAME	ADDRESS	ADDRESS		
MOTHER'S NAME	ADDRESS	ADDRESS		
GUARDIAN'S NAME	ADDRESS			
TUITION PAID BY				
PLACE OF BIRTH—STATE	COUNTY	CITY OR TOWN		
YEAR OF BIRTH	MONTH	DAY OF MONTH		
IN CASE OF SERIOUS ILLNESS OR ACCIDENT NOTIFY				
EDUCATION:				
SECONDARY SCHOOL—NAME OF	LOCATION			
SESSIONS ATTENDED				
YEAR OF GRADUATION OR LEAVING				
DIPLOMA OR CERTIFICATE RECEIVED				
NUMBER OF UNITS WITH CREDITED—TOTAL	ENGLISH	ALGEBRA	GEOMETRY	TRIGONOMETRY
PHYSICS	ZOOLOGY	BIOLOGY	PHYSIOGRAPHY	ASTRONOMY
CHEMISTRY	COMMERCIAL			HISTORY
DRAWING	GEOGRAPHY			GEOLOGY
COLLEGIATE INSTITUTION—NAME OF	LOCATION			
SESSIONS ATTENDED				
GRADUATED OR LEFT—YEAR				
DEGREE RECEIVED	DATE OF DIPLOMA		NAME OF INSTITUTION	GRANTING
CREDITS—TOTAL	CHEMISTRY	BOTANY	ZOOLOGY	BIOLOGY
LATIN	MATHEMATICS	FRENCH	SPANISH	ITALIAN
	PHYSICS			HISTORY
	GREEK			GERMAN
	PSYCHOLOGY			
ENTERED MEDICAL SCHOOL: SESSION OF	CLASS	DATE		
"	"	"		
"	"	"		
"	"	"		
RECEIVED DEGREE OF M. D.—YEAR	MONTH	DAY OF MONTH	SESSION	CLASS
OTHER MEDICAL SCHOOL ATTENDED—NAME		LOCATION	"	"
			"	"
			"	"
ALUMNUS RECORD: SUBSEQUENT MEDICAL HISTORY—HOSPITAL INTERN, NAME OF HOSPITAL				LOCATION
HOSPITAL SERVICE				
OTHER MEDICAL SERVICE OR POSITIONS				
POST OFFICE ADDRESS				

After some discussion of various sections of this report, attention was called to the fact that these subjects were also a part of the report of the Executive Council and of the Committee on Revision of Constitution and By-Laws; therefore, Dr. Cutter moved that they be referred back to these three committees for further consideration and the preparation of a joint report. The motion was seconded and carried.

REPORT OF DELEGATE TO NATIONAL EMERGENCY COUNCIL
ON EDUCATION

Dr. Burton D. Myers read his report as delegate to the National Emergency Council on Education.

On January 29 and 30, 1918, the executive committees of eight National Educational Associations met in Washington, sixteen representatives in addition to Commissioner Claxon and Dr. Capen of the Bureau of Education being present.

The eight Associations proceeded to organize as the American Council on Education and invited other national associations to membership.

The expressed object of the Council was to place the resources of the educational institutions of our country more completely at the disposal of our government to the end that through an understanding cooperation:

- (a) Their patriotic services might be augmented;
- (b) A continuous supply of educated men might be maintained; and
- (c) Preparation for the great responsibilities of the reconstruction period following the war might be anticipated.

A committee of three, with President Judson as chairman, was appointed to consider the terms of a bill creating a Department of Education in the National Government.

A committee of three, with President Foster of Reed College as chairman, was appointed to consider amendments to the Selective Service Act. This committee recommended the placing of all male college and university students on the basis of enlisted men detailed by the army for preparation for various forms of service by further study, with provision for suitable pay, uniform, and equipment.

In a conference with General Rees, Chairman of the Committee on Education of the War Department, the recommendation relative to college students was discussed. General Rees requested that the Council suggest types of educational organizations which should be represented by the civilian members of the Army Education Board.

At the annual meeting of this Association, 1918, the invitation to membership in the American Council on Education was accepted, and Dr. B. D. Myers was appointed the delegate of the Association.

On March 26 and 27, 1918, the American Council on Education met in Washington with the following twelve National Associations represented:

- Association of American Universities.
- National Association of State Universities.
- Association of American Colleges.
- Association of Urban Universities.
- Catholic Educational Association.
- American Association of University Professors.

National Educational Association.

National Educational Association, Department of Superintendence.

National Educational Association, National Council of Education.

National Council of Normal Schools.

Society for Promotion of Engineering.

Association of American Medical Colleges.

A permanent organization was effected with Chairman, Donald J. Cowling, President of Association of American Colleges; Secretary-Treasurer, President P. L. Campbell (Oregon); Acting President of National Association of State Universities.

Additional members of Executive Committee:

Herman V. Ames, Secretary Association American Universities.

Thos. E. Finnegan, President National Educational Association, Department of Superintendence.

Thos. J. Shahan, President Catholic Educational Association.

There followed a discussion of the relation of the American Council on Education to the War Department Committee on Education and Special Training; to the Federal Board on Vocational Education; and to the National Society for the Promotion of Industrial Education.

A motion was passed approving the movement presented by President Cowling to provide scholarships for at least one hundred young French women to study in approved American colleges and recognizing the Association of American Colleges as the agency in charge of this undertaking.

The probable visit of English, French, and Italian educational commissions was discussed. A committee on international relationships was established with Dean Ames of the University of Pennsylvania as chairman.

Universal military training was discussed. The Council voted unanimously to support the Chamberlain bill.

Following a conference with Dr. Mann, Chairman of the Advisory Committee on Education and Special Training of the War Department, the Council voted unanimously to approve the preliminary proposal of the War Department Committee on Education to establish a cadet reserve corps in colleges and universities, in recognition of the student body of these institutions as a reservoir of potential leaders for military service.

A conference was held with Prof. G. D. Strayer, Chairman of the National Educational Association Joint Commission.

The Council adjourned to meet in Philadelphia on May 16, 1918.

I was unable to be present at the Philadelphia meeting May 16, 1918, held for the purpose of electing officers and transacting other business. I am indebted to Dean Pepper, who acted as my alternate at this meeting, for a report of this meeting. The officers of the Association already reported were re-elected for the coming year. It was determined to establish an office in the Munsey Building, Washington, with Dr. Robert L. Kelly, Secretary of the Association of American Colleges, in personal charge of certain features of the work of the Council.

On July 18, 1918, the following statement of the aim of the Council was published:

"The American Council on Education was called into being, under the pressure of the war, to serve not only as a means of easy communication between the educational associations of the country and the Federal Government, but also as a clearing house of opinion and a starting point

of action in the American educational world. Its first name was the 'Emergency Council on Education,' but since it soon became evident that most of its proposed activities were permanent in character, demanding far-sight and far-planning to bring them to satisfactory fruition, and since its programme was not only national in scope but involved cooperation in a distinctive national way with similar councils in other lands and with foreign governments, its name was changed to the one it now bears.

"After prolonged discussion and continuous consultation with many competent advisers, the following committees were established to carry on work that seemed to call specially for immediate undertaking:

"I. Committee on Students' War Service, whose object will be to encourage young men and women to continue their studies from high school to college and from college to university, so as to provide for a body of trained leaders and specialists who, both during and after the war, may efficiently meet the nation's needs.

"II. Committee on Education for Citizenship, whose object will be to secure more adequate instruction in the schools regarding the history of America, its principles of government and ideals of individual conduct, and to afford the means of making plain to as many as possible the grave issues of the war, these aims to be achieved, amongst other ways, by the preparation or circulation of books and pamphlets by judicious authorities.

"III. Committee on Educational Reconstruction, whose object will be to bring together previous studies of educational conditions in the United States, and to supplement this material by such additional studies as may be necessary to clarify the problems of American education. This general survey having been made, the committee will call a conference to consider what alteration of our educational methods would help the schools and colleges of the country to make their work more effective to the advantage of the nation.

"IV. Committee on International Educational Relations, whose object will be to coordinate, harmonize, and so far as expedient, direct present and prospective agencies for the strengthening of cultural relationships with foreign lands, especially through the interchange of students and teachers. The committee will endeavor to establish a bureau where educational information regarding all nations may be obtained, knowledge of American institutions disseminated, and means acquired to enable American students to go abroad as well as to encourage the coming of foreign students to the United States.

"V. Committee on Opportunities for Study, whose object will be to prepare and publish lists of advanced courses of study in American institutions of learning, and to set forth the advantages of American colleges and schools in different parts of the land, so as to be able to satisfy inquiries about places for study from foreigners or Americans, and to bring about fuller utilization of the widely-distributed opportunities in the United States for research and instruction.

"VI. Committee on a Department of Education, whose object will be to further the rapidly growing demand for definite recognition of education as a separate department of the Federal Government, on a parity

with the Departments of Agriculture, Commerce, and Labor, and to consider the arrangements for such a department when created.

"VII. Committee on Cooperating Societies, whose object will be to keep in touch with, and promote the success of such other associations and councils as are or may be concerned with the better organization and equipment of educational institutions, the welfare of students and teachers, or the advancement of knowledge."

On Nov. 11, 1918, a meeting of the Council was held in Chicago.

When the Council began its work a year ago, it was designed primarily to meet an emergency situation. It held itself ready at any time to take up any work which might further the interests of the Government through the channels of the educational machinery of the country. That the Council has received recognition and attained a certain prestige is indicated by the fact that the President of the United States asked for its assistance in the nation-wide campaign in behalf of American education; that Brigadier General Rees wrote a most cordial letter of appreciation of the assistance the Council was rendering in connection with the work of the Committee on Education and Special Training of the War Department; that Secretary Lansing has cordially approved of the work proposed by its Committee on Foreign Educational Relations; that the Surgeon General called upon the Council to use its machinery in enlisting ten thousand young women for preliminary training for nursing in accordance with the Vassar plan somewhat modified; that the Council of National Defense officially requested the Council to have entire charge of the reception of the British Educational Mission; that the State Department assigned to the Council the reception and supervision of the itinerary of the Mission of French professors visiting this country; that in cooperation with the Association of American Colleges, the Council has brought over 117 young French women and twenty invalided French student soldiers on scholarships providing in each case for board, room, tuition, and all other fees.

In addition to the undertakings referred to above, the Council has rendered service in many other directions, and has served at Washington as a center for inquiries about educational matters from all over the country. During the brief months of its existence, it has abundantly demonstrated the need and opportunity for an organization of this sort. The important matters which have been entrusted to it are sufficient evidence that the leadership of the Council will be increasingly recognized if it continues to receive the backing of the various national educational associations, and moderate financial support.

The present officers of the Council have devoted to its work a large share of their time since last January without any salary whatever and, for the most part, without any allowance for expenses. It is not to be expected that they could continue to render such services now that the war emergency is practically past.

If it should seem wise to employ a salaried executive, it would probably require twenty-five or thirty thousand dollars a year to cover his salary and expenses; to provide him with adequate secretarial and other help; to maintain headquarters at Washington or New York; and a minimum allowance for publications and other printing. If such a program as this were undertaken, adequate financial support should be provided for a period of at least five years.

A conference was held with the British Commission on Education. After appointing a special committee on organization, the Council adjourned to meet in Boston December 3rd.

The meeting in Boston was called to order on December 3, 1918, when plans for reorganization were discussed at length. The meeting adjourned to reassemble on December 6, 1918, when the following report was presented and adopted:

"1. Name: The name of the organization shall be 'American Council on Education.'

"2. Object: The general object of the Council is to promote and carry out coöperative action in matters of common interest to the associations represented in it, so far as such coöperation is not already adequately provided by existing agencies. [It is expected that such matters will lie mainly in the field of university and college work, or in other educational fields as related to this field. The Council was organized to meet national needs in time of war and will always seek to render patriotic service. It will, so far as practicable, encourage international coöperation in educational matters.]

"3. Membership: The membership shall consist of the following national educational organizations and such other bodies having similar aims and interests as may from time to time be added by the Council:

"Association of American Universities.

"National Association of State Universities.

"Association of American Colleges.

"Association of Urban Universities.

"Catholic Educational Association.

"Association of American Agricultural Colleges and Experiment Stations.

"Association of Collegiate Schools of Architecture.

"National Association of Corporation Schools.

"Society for the Promotion of Engineering Education.

"Association of American Law Schools.

"Association of American Medical Colleges.

"National Research Council.

"American Association of University Professors.

"National Education Association.

"N. E. A.—Department of Superintendence.

"N. E. A.—National Council of Education.

"National Council of Normal School Presidents and Principals.

"Each association shall be entitled to elect three members of the Council, who shall vote as a unit through a designated person. It is recommended that each association in the first election following the date of this meeting, elect one member for a term of one year; one, for a term of two years; and one for a term of three years; and that all subsequent elections be for terms of three years. Elections of new members to the Council shall take effect on July first following such elections, except that any election, to fill a vacancy occurring during the year, shall take effect at once, and shall be for the remaining period of the term thus filled.

"There shall also be Institutional Members and Associate Members, without right to vote in the Council. Institutional members shall be colleges, universities, and technical schools of similar grade, contributing

not less than one hundred dollars a year to the treasury of the Council. They may send one representative each to the meetings of the Council. The Council shall, at the request of any member, refer any matter directly affecting Institutional members to their representatives for expressions of judgment before final action is taken by the Council. Associate members may also send representatives to the meetings of the Council.

"4. Powers: The Council shall have the power to act for the associations represented in it on matters of common interest on the basis of such authority as may be given it by the several associations.

"5. Officers: The Council shall elect a chairman, two vice-chairmen, a secretary, and a treasurer. The secretary and the treasurer need not be members of the Council. All funds for which the Council or any of its committees is responsible shall be received by the treasurer. He shall pay bills only when duly approved by the chairman and the secretary, or by the secretary alone in case of bills under one hundred dollars.

"6. Executive Committee: There shall be an Executive Committee, consisting of the Chairman of the Council as chairman, and six other members elected by the Council. The Executive Committee shall report its action monthly to the members of the Council, and the Council shall report to the several associations at the close of each year ending June 30th, and at such other times as may be desired.

"In case a member of the Executive Committee shall fail to attend (or to designate an alternate) at two meetings of the Executive Committee, he shall cease to be a member thereof.

"In case of a vacancy on the Executive Committee, the committee shall arrange for filling the vacancy by calling a meeting of the Council, or by arranging for a letter ballot by members of the Council.

"7. Meetings: The Council and the Executive Committee may conduct business by mail, but the Council shall hold at least one meeting each year.

"The annual meeting of the Council shall be held on the first Friday in May. All officers shall be elected at the annual meeting, and their terms of office shall begin July first.

"8. Budget: The Executive Committee shall prepare a budget each year, and no financial obligation shall be incurred by any officer or committee except as authorized by the Council or the Executive Committee.

"9. Traveling Expenses: Traveling expenses of the officers and the Executive Committee may be paid from the funds of the Council.

"10. Committee Appointments: The Council and the Executive Committee may appoint special committees. All committee appointments shall expire June 30, with right to reappointment. Chairmen of committees shall be invited to sit with the Council.

"11. Authority of Committees: Final responsibility for all undertakings rests with the Council. The Executive Committee shall act for the Council between meetings, but shall refer all questions involving a policy to the members of the Council for letter ballot before taking final action. Committees are not authorized to commit the Council to any undertaking not specifically authorized by the Council or its Executive Committee.

"12. Amendments: This Constitution may be amended at any time by vote of three-quarters of the associations represented."

On motion, it was voted to approve the above report, subject to ratification by letter ballot by two-thirds of all the members of the Council. It is understood that the adoption of the above report shall become operative, at points where changes in our present plan of organization are involved, on July 1st, 1919.

COOPERATIVE RELATIONS WITH OTHER GROUPS

On motion, the chair was authorized to appoint a committee to nominate a secretary, who shall also serve as secretary of each committee, at a salary of \$5,000 to \$8,000. The chair appointed Messrs. Ames, McCracken, Thompson, and Tyler.

FINANCE COMMITTEE

On motion, the chair was authorized to appoint a Finance Committee, with himself as chairman, to undertake to secure funds of about \$25,000 per year for a period of five years. The chair appointed Bishop Shahan, with the understanding that other members would be appointed later.

COÖPERATIVE RELATIONS WITH OTHER GROUPS

On motion, the Committee on Coöperating Societies was requested to confer with the National Conference Committee on Standards of Colleges and Secondary Schools, with the Council of Church Boards of Education, and with the Y. M. C. A. Committee on Friendly Relations Among Foreign Students, regarding their respective relations to the work of the Council.

POLICY REGARDING PUBLICATIONS

On motion, it was voted that the Executive Committee, or a special committee to be appointed by the Executive Committee, be requested to submit to the members of the Council recommendations regarding the policy which should be followed by the Council in the matter of issuing publications.

APPROPRIATION FOR COMMITTEE ON EDUCATION FOR CITIZENSHIP

It was voted to continue the Washington office of the Council. The chairman reported that he had arranged with Dr. R. L. Kelly to continue his services to the Council until December 15, 1918. The chairman was requested to express to Dr. Kelly the gratitude of the Council for his exceedingly valuable work during the past five months.

NATIONAL DEPARTMENT OF EDUCATION

There was extended discussion of the pending N. E. A. Bill, proposing the establishment of a National Department of Education.

On motion by President McCracken, President H. C. King was added to the Committee on National Department of Education. The committee was authorized to nominate additional members for appointment, by the Executive Committee.

The Council adjourned at 12:30 p. m.

(Signed) B. D. MYERS.

At the conclusion of his report Dr. Myers moved the appointment of three delegates to the National Council on Education, one for one year, one for two years, and one for three years, and that vacancies on this commission be filled by appointing a delegate for a term of three years.

The motion was duly seconded and carried.
 The chair appointed Dr. W. B. Cannon, one year; Dr. William H. Welch, two years; Dr. Burton D. Myers, three years.

REPORT OF NOMINATING COMMITTEE

At this juncture Dr. Hill presented the report of the Nominating Committee, which was as follows:

President, GEORGE BLUMER, Yale University.

Vice-President, A. C. EYCLESHYMER, University of Illinois.

Secretary-Treasurer, FRED C. ZAPFFE, Chicago.

Members of Executive Committee, C. R. BARDEEN and J. EWING.

Dr. Hill moved that the report of this committee be adopted and that the secretary be instructed to cast one ballot for the election to office of the nominees. The motion was seconded by Dr. Myers and carried. The secretary cast the unanimous ballot of the Association as instructed, and the chair declared the nominees duly elected to office.

REPORT OF AUDITING COMMITTEE

The Auditing Committee reported that the accounts of the treasurer had been audited and found to be correct.

On motion, duly seconded, the report was received.

The president's address being called for, the secretary stated that Dr. Means had prepared and left for reading his presidential address, with the request that it be read by title and published in the Transactions.

On motion, duly seconded, Dr. Means' address was read by title and ordered published in the Transactions.

Dr. George Blumer, dean, Yale University School of Medicine, then read a paper entitled "Lengthening of College Terms." This paper was discussed by Drs. W. D. Cutter, A. Ross Hill, B. D. Myers, W. F. R. Phillips, C. A. Hamann, J. L. Heffron and in closing, by Dr. Blumer.

Dr. E. P. Lyon, dean, University of Minnesota Medical School, followed with a paper on "Premedical Requirements of Returning Soldiers," which was discussed by Drs. J. M. Dodson, F. C. Waite, Irving S. Cutter, B. D. Myers, W. S. Carter and Theo. Hough.

REPORT OF COMMITTEE ON GRADUATE AND UNDERGRADUATE DEGREES

The report of the Committee on Graduate and Undergraduate Degrees was called for. The report was read by the chairman of the committee, Dr. A. C. Eycleshymer (see page 32).

Dr. B. D. Myers moved that the report be adopted and that the committee be continued with instructions to cooperate with similar committees appointed by other educational organizations.

The motion was duly seconded and carried.

The chair appointed on this committee, Drs. A. C. EYCLESHYMER, University of Illinois; A. ROSS HILL, University of Missouri; E. P. LYON, University of Minnesota.

REPORT OF COMMITTEE ON EQUIPMENT

The report of the Committee on Equipment, which was called for next, was read by the chairman of the committee, Dr. Charles P. Emerson. (See page 25.)

On motion, duly seconded, the report was received and ordered published in the transactions.

The secretary read a telegram from Dr. Bardeen, stating his inability to be present at the meeting because of illness in his family; therefore, Dr. Bardeen's paper was passed.

The Association then adjourned until 2 o'clock.

AFTERNOON SESSION

In the afternoon the Association met in joint session with the Federation of State Medical Boards.

The meeting was called to order by Dr. David A. Strickler, president of the Federation, at 2 o'clock, and he then introduced Dr. Heffron, who presided during the remainder of the session.

Two papers were read, the first entitled "Desirability of Changing the Type of the Licensure Examinations," was read by Dr. George Blumer; the second, entitled, "Coöperation in Examinations by the National Board of Medical Examiners, the State Licensing Boards and the Medical Schools," was read by Dr. John S. Rodman, secretary of the National Board of Medical Examiners.

These two papers were discussed by Drs. J. M. Dodson, B. D. Harison, Isadore Dyer, Thos. McDavitt, W. C. Rucker and J. Ewing.

The Association then went into executive session.

The resolution, which Dr. Lyon stated he would offer as a summary of his paper, and which had been read to the Federation, was then read (see page 23), and on motion, duly seconded, was adopted.

ACTION ON CHANGES IN CONSTITUTION AND BY-LAWS

Dr. Phillips, the chairman of the Committee on Education and Pedagogics, then announced that the three committees to which had been referred the proposed changes in the constitution and by-laws, as set forth in the report of his committee, the report of the Executive Council and the report of the Committee on Revision of Constitution and By-Laws, were now ready to report.

The report was read by the secretary, and after considerable discussion, the report of the Committee on Revision of the Constitution and By-Laws (Transactions 918, page 84) was adopted, with the following exceptions: Article IV and Article V were eliminated and were made by-laws 7 and 8. Articles VI, VII, VIII and IX were renumbered V, VI, VII and VIII, respectively. In place of the Article IV, as printed in the report of the committee, the following was substituted:

ARTICLE IV.

SECTION 1 This Association shall have the power to establish for its membership such educational standards, rules and regulations, governing admission to the study of medicine, the curriculum of study, and the requirements for graduation, as it shall deem necessary for the best interests of medical education and the aims and objects of this Association.

SEC. 2. This Association shall also have power to establish such other rules and regulations as may be deemed necessary to further the aims and objects of this Association.

SEC. 3 All educational standards and all rules and regulations established by this Association shall be embodied in the by-laws of the Association, and shall be observed by every member of the Association. Failure to observe such by-laws shall constitute a violation of the constitution of the Association.

SEC. 4 Any school in membership in the Association which shall violate any part of the constitution and by-laws shall be subjected to such discipline or penalty as the Association may deem fit and proper.

Section 7 of the by-laws as reported by the Committee on Revision of the Constitution and By-Laws was stricken out and the following sections 7, 8, 9 and 10 were added, as follows:

SEC. 7. I HIGH SCHOOL REQUIREMENT: (a) Every college holding membership in this Association shall on and after January 1, 1919, require for matriculation written evidence of the completion of at least fourteen (14) units in a standard accredited high school or other institution of standard secondary school grade, or have the equivalent, as demonstrated by examinations conducted by the College Entrance Examination Board, or by the authorized examiner of a standard college or university which has been approved by a recognized accredited agency. Unless all the entrance units are obtained by examination, a detailed statement of attendance at the secondary school, and a transcript of the student's work, should be kept on file by the college authorities. This evidence of actual attendance at the secondary school should be obtained, no matter whether the student is admitted to the freshman or to higher classes.

(b) Credits for admission to the premedical college course may be granted for the subjects shown in the following list, and for any other subject counted by a standard accredited high school as a part for the requirements for its diploma, provided that at least eleven (11) units must be offered in Groups I to V:

- GROUP I. English, required, 3 units
- GROUP II Foreign languages, required, 2 units.
- GROUP III Mathematics, required, 2 units.
- GROUP IV. History, required, 1 unit.
- GROUP V. Science
- GROUP VI *Miscellaneous*, not more than 4 units.
 - Agriculture
 - Bookkeeping.
 - Business law.
 - Commercial geography.
 - Domestic science
 - Drawing, freehand and mechanical.
 - Economics and economic history.
 - Manual training.
 - Music: Appreciation or harmony.

A unit is the credit value of at least thirty-six weeks' work of four or five recitation periods per week, each recitation period to be of not less than forty minutes duration. In other words, a unit represents a year of study in any subject in a secondary school constituting approximately a quarter of a full year's work. A satisfactory year's work in any subject cannot be accomplished under ordinary circumstances in less than 120 sixty-minute hours, or their equivalent.

Both of the required units of foreign language must be of the same language.

Of the fourteen units of high school work (fifteen after January 1, 1920), eight (8) units are required, as indicated in the foregoing schedule, the balance may be made up from any of the other subjects in the schedule.

II PREMEDICAL COLLEGE COURSE Beginning January 1, 1919, the minimum required for admission to acceptable medical schools, in addition to the high school work specified above, will be sixty semester hours of collegiate work in a college approved by a recognized accrediting agency. The subjects included in the sixty semester hours of college work should be in accordance with the following schedule:

REQUIRED SUBJECT	SEMESTER HOURS
Chemistry (a)	12
Physics	6
Biology (b)	6 or 8
English composition and literature (c)	6

SUBJECTS RECOMMENDED

- A modern foreign language
- Comparative vertebrate anatomy
- Psychology.
- Social science.

A semester hour is the credit value of sixteen weeks' work consisting of one lecture or recitation period per week, each period to be of not less than fifty minutes duration net, at least two hours of laboratory work to be considered as the equivalent of one lecture or recitation period.

(a) Chemistry—Twelve semester hours required (eight until January 1, 1920), of which at least eight semester hours must be in general inorganic chemistry, including four semester hours of laboratory work. In the interpretation of this rule, work in qualitative analysis may be counted as general inorganic chemistry. The remaining four semester hours (required after January 1, 1920) shall consist of work in organic chemistry.

(b) Biology—Eight semester hours required, of which four must consist of laboratory work. This requirement may be satisfied by a course of eight semester hours in either general biology or zoology, or by courses of four semester hours each in zoology and botany, but not by botany alone. This requirement may also be satisfied by six semester hours of collegiate biology if preceded by a year (one unit) of high school biology.

(c) English Composition and Literature—The usual introductory college course of six semester hours, or its equivalent, is required.

SEC. 8 CURRICULUM. The entire course of four years shall consist of not less than 3,600 hours, and shall be grouped in divisions and subdivided into subjects, each division and each subject to be allotted approximately the number of hours and percentages of the whole shown in the following schedule.

DIVISION I

ANATOMY, 684 Hours (19%)

	Minimum % of 3,600 Hours
1 Gross anatomy, including clinical or applied anatomy	19%
2 Microscopic anatomy	
3 Embryology	

DIVISION II

PHYSIOLOGY AND CHEMISTRY, 468 Hours (13%)

1 Physiology	8%
2 Biochemistry	5%

DIVISION III.

PATHOLOGY AND BACTERIOLOGY, 468 Hours (13%).

- | | |
|---|-----|
| 1. Pathology, including necropsies | 8% |
| 2. Bacteriology, including serology and imminology..... | 3½% |
| 3. Preventive medicine and public health..... | 1½% |

DIVISION IV.

PHARMACOLOGY, 216 Hours (6%).

- | | |
|--------------------------------------|------|
| 1. Materia medica and pharmacy | } 6% |
| 2. Pharmacology | |

DIVISION V.

MEDICINE AND MEDICAL SPECIALTIES, 900 Hours (25%).

- | | |
|--|-----|
| 1. General medicine, including laboratory diagnosis..... | 15% |
| 2. Pediatrics | 4% |
| 3. Nervous and mental diseases..... | 3½% |
| 4. Dermatology and syphilis | 2% |
| 5. Medical jurisprudence | ½% |

DIVISION VI.

SURGERY AND SURGICAL SPECIALTIES, 648 Hours (18%).

- | | |
|--|-----|
| 1. Surgery | 11% |
| 2. Orthopedic surgery | 2% |
| 3. Urology | 1% |
| 4. Ophthalmology | 1½% |
| 5. Otology, rhinology and laryngology..... | 1½% |
| 6. Roentgenology | 1% |

DIVISION VII.

OBSTETRICS AND GYNECOLOGY, 216 Hours (6%).

- | | |
|---|----|
| 1. Obstetrics, including obstetric surgery..... | 4% |
| 2. Gynecology | 2% |
- When teaching conditions demand it, a subject may be transferred from one division to another.

SEC. 9. Each college in membership in this Association shall print the following in every annual catalogue or in some other convenient form for distribution:

1. A calendar of the annual session, giving the dates of terms and recesses, vacations and commencement.
2. A list of the board trustees or officers of the institutions, especially if it is a privately incorporated institution, with their occupations and terms of office.
3. A list of the faculty of the institution, which should be properly graded, especially if different powers are conferred on different grades of instructors.
4. An introductory historical statement which should give a brief account of the developments of the institution.
5. A brief general statement as to the organization of the institution.
6. A general statement as to the equipment of the institution, such as buildings and laboratory, library, hospital and dispensary facilities.
7. A brief financial statement showing the income and expenses and the sources of revenue.
8. The requirements for admission.
9. The requirements for advanced standing.
10. The rules for promotion and classification.
11. The requirements for the degree.
12. A statement covering fees and expenses of the course.
13. A statement regarding scholarships and aids to meet the expenses.
14. A statement regarding state board examinations in the state in which the institution is situated.
15. A statement regarding the courses of study, beginning with a general statement of the aims of the curriculum and a condensed curriculum, and followed by a brief description of each course, arranged under departments. The condensed curriculum should be arranged in the form of a table so that the number of hours per term and per year assigned to each subject may be readily available. The statements describing

courses should be brief and should state the nature of the instruction, and without elaboration the general content of the course, with the name of the instructor, the time consumed and the period of the college year in which the course is given.

16. A statement regarding the privileges accorded to students of the school, especially if the school is connected with a university which permits medical students to share in privileges with other students.

17. A list of the graduates of the preceding year with honors and prizes.

18. A list of the students in the school at the time the catalogue is published.

Sec. 10. These by-laws may be amended only by submitting a written copy of the proposed amendment twenty-four (24) hours before action can be taken on it, and by a two-thirds vote of the members represented at any annual meeting. This rule does not apply to Sections 7 and 8, which are subject to amendment only after having given written notice of a proposed amendment at least thirty days previous to taking action on it.

On motion, duly seconded, the report of the Committee on Revision of the Constitution and By-Laws, as amended, was adopted.

Dr. Irving S. Cutter then presented the following resolution, and moved its adoption:

WHEREAS, The meetings of the Association of American Medical Colleges are of the greatest importance to medical educators in the discussion of problems of medical education; and

WHEREAS, For the past few years the meetings have been entirely too limited in time for the reading and discussion of papers dealing with pertinent medical educational topics; therefore,

Be it resolved, That the Executive Council of this Association be instructed to schedule the program of 1920 on Monday and Tuesday, the date and place of meeting to be fixed later by the Executive Council.

The motion to adopt was lost.

NOTICE TO AMEND CONSTITUTION

Dr. Henry Enos Tuley, University of Louisville, gave notice that at the next annual meeting of the Association he would move to amend Article VI, Section 5, by adding in the eighth line after the portion of the word necessary, to wit, "essary," the following: The members of these various committees shall be appointed in such manner, that each year one member shall retire from the committee, the new appointee to serve as many years as there are members on the committee.

Dr. Phillips then made a verbal report as the representative of the Association on the special committee whose report was made in 1918 and published in full in the Transactions (see page 76).

A random discussion as to the time for holding the next annual meeting disclosed the fact that it is considered very necessary that more time be given to the meeting; that a two days session is most desirable, either Tuesday and Wednesday of the week of the Educational Conference, or Monday afternoon and Tuesday. The opinion was expressed and concurred in, although not put to a vote, that the Executive Council should give careful attention to

this point when arranging the program and time of meeting for the next annual session.

Dr. Blumer, president-elect, was then conducted to the chair and addressed the delegates in a few well chosen words, which were received with loud applause.

Dr. Heffron moved that a telegram of sympathy be sent to Dr. Means. Seconded and carried.

The Association then adjourned *sine die*.

Dr. JOHN L. HEFFRON, Chairman.

Dr. FRED C. ZAPFFE, Secretary.

MINUTES OF THE ORGANIZATION MEETING OF THE EXECUTIVE COUNCIL

At the meeting of the Executive Council held in the Hotel La Salle, Chicago, March, 4, 1919, the following business was transacted:

In the absence of a chairman, the meeting was called to order by the secretary.

On motion, duly seconded and carried, Dr. Irving S. Cutter was elected chairman of the Council for the ensuing year.

On motion, duly seconded and carried, Dr. W. J. Means was appointed the delegate to the Association to the Council on Medical Education of the American Medical Association.

On motion, duly seconded and carried, an honorarium of \$600.00 was voted to the secretary-treasurer for the ensuing year, and an honorarium of \$200.00 to the chairman of the Council.

On motion, duly seconded and carried, the following membership of the three standing committees of the Association was appointed:

Committee on Education and Pedagogics: Dr. W. S. Carter, University of Texas, chairman; Dr. A. Ross Hill, University of Missouri; Dr. W. O. Thompson, Ohio State University; Dr. Theodore Hough, University of Virginia; Dr. W. F. R. Phillips, University of the State of South Carolina.

Committee on Equipment: Dr. Chas. P. Emerson, University of Indiana, chairman; Dr. Alfred L. Gray, Medical College of Virginia; Dr. G. Camby Robinson, Washington University.

Committee on Medical Research: Dr. Frederic S. Lee, Columbia University, chairman; Dr. R. M. Pearce, University of Pennsylvania; Dr. W. B. Cannon, Harvard University.

The Council then adjourned.

(Signed) IRVING S. CUTTER, Chairman.

FRED C. ZAPFFE, Secretary.

OFFICERS AND COMMITTEES FOR 1919-1920

President: DR. GEORGE BLUMER, New Haven, Conn.

Vice-President: DR. A. C. EYCLESYMER, Chicago.

Secretary-Treasurer: DR. FRED C. ZAPFFE, 3431 Lexington Street, Chicago, Ill.

EXECUTIVE COUNCIL

DR. IRVING S. CUTTER, Chairman, Omaha, Neb.

DR. ISADORE DYER, New Orleans.

DR. CHARLES R. BARDEEN, Madison, Wis.

DR. J. EWING, New York, N. Y.

DR. WM. J. MEANS, Columbus, Ohio.

DR. GEORGE BLUMER, New Haven, Conn.

DR. FRED C. ZAPFFE, Chicago.

COMMITTEES

Committee on Education and Pedagogics

W. S. CARTER, Chairman, University of Texas, Galveston.

THEODORE HOUGH, University of Virginia, Charlottesville.

W. F. R. PHILLIPS, Medical College State of South Carolina, Charleston.

A. ROSS HILL, University of Missouri, Columbia.

W. O. THOMPSON, Ohio State University, Columbus.

Committee on Equipment

CHAS. P. EMERSON, Chairman, Indiana University, Indianapolis.

ALFRED L. GRAY, Medical College of Virginia, Richmond.

G. CANBY ROBINSON, Washington University, St. Louis, Mo.

Committee on Medical Research

FREDERIC S. LEE, Chairman, Columbia University, New York City.

R. M. PEARCE, University of Pennsylvania, Philadelphia.

W. B. CANNON, Harvard University, Boston.

MEMBERS

ALABAMA

University of Alabama, School of Medicine, Mobile.

CALIFORNIA

Leland Stanford Junior University, School of Medicine, Palo Alto and San Francisco.
 University of California, Medical School, Berkeley, San Francisco and Berkeley.

COLORADO

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

CONNECTICUT

Yale University, School of Medicine, New Haven.

DISTRICT OF COLUMBIA

Georgetown University Medical School, Washington.
 George Washington University, School of Medicine, Washington.
 Howard University, School of Medicine, Washington.
 Army Medical School, Washington.
 Navy Medical School, Washington.

GEORGIA

Emory University, Medical Department, Atlanta.
 University of Georgia, College of Medicine, Augusta.

ILLINOIS

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

INDIANA

Indiana University, School of Medicine, Bloomington and Indianapolis.

IOWA

University of Iowa, College of Medicine, Iowa City.

KANSAS

University of Kansas, School of Medicine, Lawrence and Rose-dale.

KENTUCKY

University of Louisville, Medical Department, Louisville.

LOUISIANA

Tulane University of Louisiana, School of Medicine, New Orleans.

MARYLAND

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

MASSACHUSETTS

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

MICHIGAN

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

MINNESOTA

University of Minnesota Medical School, Minneapolis

MISSISSIPPI

University of Mississippi, Department of Medicine, University.

MISSOURI

St. Louis University, School of Medicine, St. Louis.
University of Missouri, School of Medicine, Columbia.
Washington University, Medical School, St. Louis.

NEBRASKA

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

NEW YORK

Columbia University College of Physicians and Surgeons, New
York City.
Cornell University Medical College, Ithaca and New York.
Fordham University School of Medicine, New York City.
Syracuse University, College of Medicine, Syracuse.
University and Bellevue Hospital Medical College, New York.
University of Buffalo, Department of Medicine, Buffalo.

NORTH CAROLINA

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

NORTH DAKOTA

University of North Dakota, School of Medicine, University.

OHIO

Ohio State University, College of Medicine, Columbus.
 University of Cincinnati, College of Medicine, Cincinnati.
 Western Reserve University, School of Medicine, Cleveland.

OKLAHOMA

University of Oklahoma, School of Medicine, Norman and Oklahoma City.

PENNSYLVANIA

Hahnemann Medical College and Hospital, Philadelphia.
 University of Pennsylvania, School of Medicine, Philadelphia.
 University of Pittsburgh, School of Medicine, Pittsburgh.
 Woman's Medical College, Philadelphia.

PHILIPPINE ISLANDS

University of the Philippines, College of Medicine and Surgery, Manila.

SOUTH CAROLINA

Medical College of the State of South Carolina, Charleston.

TENNESSEE

University of Tennessee, College of Medicine, Memphis.
 Vanderbilt University, Medical Department, Nashville.

TEXAS

Baylor University, School of Medicine, Dallas.
 University of Texas, Medical Department, Galveston.

VERMONT

University of Vermont, College of Medicine, Burlington.

VIRGINIA

Medical College of Virginia, Richmond.
 University of Virginia, Department of Medicine, Charlottesville.

WEST VIRGINIA

University of West Virginia, School of Medicine, Morgantown.

WISCONSIN

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