retrograde educational movement. They could in no sense afford it, nor would it be in accord with any of their traditions. They have for years submitted to being held back by the inability of the weaker schools to move forward rapidly on account of their financial handicap. It is but reasonable to expect that the faculties' association would either go to pieces or become divided into two separate organizations with separate standards.

The question at once presents: What would be the attitude of the legally-appointed examiners in the states which hold their boards responsible as to the judging of the reputability and standings of the colleges from which their applicants for license have graduated?

What would be the attitude of the profession at large? Will the men who are out in the open, bearing the heat and burden of the day before the public, tamely submit to the open discredit that would be cast on their chosen calling by a national lowering of its educational standards?

It seems impossible that such a calamity as a division of college forces on this question could occur, and still more impossible that a decided retrograde movement can possibly receive the sanction of a majority of the schools. But should this happen, it is safe to predict that the rank and file of dentists will put their stamp of disapproval on such a transaction in no uncertain manner. The prediction is reasonable that schools of the trimming and retrograde type would be allowed to fall back out of sight and be forgotten in the onward march of the development and evolution of dental educational standards.

SOME PHASES OF DENTAL EDUCATION.*

A. E. BALDWIN, M.D., D.D.S., LL.B.

CHICAGO.

In order to realize that we are living at a very rapid rate, we have but to look backward to see the progress that has been made in almost all lines within the memory of even the younger men of the profession. By observation we are shown that the education required to enable one to call oneself an educated artisan, scientist or professional person was very meager as compared with the demands and the requirements of to-day.

The question often arises in my mind whether or not stomatology, as a specialty, has kept pace with the march of progress in other lines, and especially in coincident professional lines. Much has been written, much is being written, and much more is being thought, as to the proper lines of progressional development in education in our specialty. Within the past few years we have seen that the National Association of Dental Faculties has, after long discussions, extended the requirements, preliminary and graduating, until now the time required in our most progressive schools is nothing less than a four years' course, with more strict preliminary requirements. However, by noticing the actions of some of our educators, we fear that there is a movement on foot—especially in the schools which are conducted by private ownership—because of a fear that with these added requirements the collegiate expenses will be increased, with a corresponding decrease in receipts; consequently these schools—which are conducted, if you please, for financial gains incidentally—look on the matter as a strictly mercantile transaction, and I fear

that there may be a retrogressive move lessening the preliminary requirements, and also lessening the amount of time necessary to be spent in schools in order to graduate.

It has been my observation for a score of years that there are many people practicing with us who seem to have a fear of acquiring too broad and comprehensive an education; indeed, a short time ago a paper was read before the Odontological Society of Chicago by Dr. H. T. Carlton, San Francisco, in which he advocated a radical advance in not only the preliminary requirements for entering our colleges, but also an emphatic advance in the requirements which must be met before graduation is allowed. This paper was read before the largest assemblage of dentists ever gathered in the world, and, much to my surprise, many men who had been classed with those who were in favor of advanced education showed by their discussion of this paper that apparently they were afraid that the young men entering our field might be too broadly educated and too well grounded in knowledge, not only of the whole human frame, but in all other scientific directions. It was convincing to a reasoning and observing mind that the only hope for rapid and thorough educational progress in our field lies in the schools which are maintained and conducted otherwise than for financial ends. In other words, the hope of dentistry, in its progressive advance, lies more largely than we will admit, first, in the schools which are founded and conducted in connection with our great colleges and universities, and, second, in the gradual elimination of the schools which are conducted by organized capital for the income which it produces, or by the organized professional band who, for notoriety or gain, organize and conduct schools which apparently are more anxious for numbers than for intellectual prominence. This is said with regret and with no intention to belittle or attack any school or college in particular, but with recognition of the fact that if the teachers or the organization have a direct financial interest in the income, gross and net, it must hamper or modify the influence which the school and teachers may exert over the student and the requirements demanded of him.

A great movement in advance can be forced if our national organization of the several state boards unify and exact constantly advancing requirements for entering our chosen field.

DENTAL EDUCATION.

A RETROSPECTIVE AND PROSPECTIVE VIEW.*

JOHN S. MARSHALL, M.S., M.D.

SAN FRANCISCO.

"We will not anticipate the past, our retrospection will be all of the future."

It is my purpose in this short paper to take a hasty retrospective glance at the history of dental education in the United States, that I may hold before you for a moment a picture of progress that has seldom been equaled in the history of educational advancement, and then to change the view and hold before you another picture, a prospective view, the realization of which will be no more difficult to us and our children than was that of the first picture to our fathers and ourselves.

"Past and to come seems best; things present worse."

Shakespeare never wrote a truer line than this, for,

*Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee.

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if we were satisfied with the present, there would be no progress in the future. Satisfaction with the present brought decay and ruin on the ancient Egyptians and on the Roman Empire.

A RETROSPECTIVE VIEW.

We learn from history that the art and science of surgery is an outgrowth or evolution of the tonsorial art. Two hundred years ago the barber was also the surgeon. His functions were to shave and cut hair; to bleed the prince or the pauper; to bind up wounds and set broken bones. The striped red, white and blue pole which stood before his shop indicated that he was ready on occasion to bleed his patron, bind up his wounds or set his broken bones. The term applied to him was barber-surgeon. His social position was that of a barber, a person to be petted on occasion, or insulted or kicked at the caprice of those of higher social position. To-day his learning and skill have placed him on the highest pinnacle of fame by reason of which kings and emperors have made him their confidant, and freely and without fear have placed their lives in his keeping.

Dental surgery was likewise evolved from the art of the barber, the tinker and the village blacksmith. A little over sixty years ago there was no such institution as a dental college, no such organization as a dental society or even a journal devoted to the interests of dental surgery. At that time the only means of education in dentistry was by the old system of apprenticeship. The dentist in those days had no social or professional standing; he was envied by the barber and looked down on by the doctor of medicine. To-day he is regarded as a member of a noble profession, standing shoulder to shoulder with the physicians and surgeons and dividing with them the honor of adding to the comfort and longevity of the human race by reason of their learning and technical skill.

The evolution of the surgeon, from the barber to the scientist, required several centuries, while the evolution of the dentist from his low degree to his present honorable position has been accomplished in as many decades. This has been wrought partly by the energy and forethought of the pioneers in the profession, but principally by the more favorable environment which surrounded the infant profession.

In these days of the rapid spread of knowledge and learning, the development of the arts and sciences and of the inventive faculties, the ignorance, prejudice and bigotry of the race have been swept away and all men and all movements, either social, political or scientific, are given an opportunity to develop, each standing or falling according to its merit. Surgery in its early struggles had to fight against the ignorance of the people, the prejudice of the scholars and the bigotry of the church, and little progress was made until the beginning of the last century. The discovery of the microscope, of vaccination, anesthesia and antiseptics made it possible for medicine, surgery and dentistry to reach their present high development, a development which is still progressing and must continue to advance in the future.

Dental education may be said to have had its beginning in the organization of the first dental college. This institution, as we all know, was incorporated and established in the city of Baltimore, Maryland, in the year 1840. Its entrance requirements were simply a desire to learn. Its curriculum was anatomy, physiology, chemistry, development of the teeth, principles of operative and mechanical dentistry and laboratory instruction; yet with this meager course of instruction, it developed some

of the brightest minds that have been found in the ranks of the profession. Its requirements for graduation were for practitioners of five years' standing, one course of lectures of about four months; for students, two courses.

A reference to the text-books of this period will show how circumscribed and narrow was the field of study, when compared with the text-books of to-day and the requirements for entrance and graduation from our best dental colleges.

With the organization of other dental colleges in various parts of the country, a rivalry sprang up between them, and as the profession advanced in scientific knowledge the curriculum was broadened and the courses extended to five months in each year.

For many years thereafter little or no advancement was made either in the course of instruction or the length of the college year. Hydra-headed commercialism had entered into the schools, taken them by the throat and well-nigh strangled them, for the great aim in most of them had become large classes and a substantial dividend at the end of the year to be divided among the incorporators.

The organization of dental societies, local, state and national, and the establishment of dental journals, which followed very soon after the incorporation of the Baltimore Dental College, and through the succeeding twenty years, were the most potent elements in arousing the colleges from the stagnation into which they had fallen through the commercial spirit. The might and power of these influences are still exerted for the uplifting and stimulating of the best impulses in education, professionalism and ethics. To the dental societies and the dental journals the colleges and the profession at large owe much of their success and scientific advancement.

The regulation of the practice of dentistry by the passage of laws for this purpose, by several of the older states, was an advance step of great moment to the interests of higher dental education. These laws recognized dental surgery as a department of medicine, and for the first time in history it was raised to the dignity of a professional calling. The public had heretofore looked on the dentist as a mechanic, spoke of the trade of dentistry, referred to his office as his shop and his operations as jobs. And, although the dental surgeon was the professor of the honorable degree of D.D.S., conferred *en course*, many persons addressed him by his title in the same spirit that they spoke of the barber as "professor," or the chiropodist as "doctor."

Time, however, changed all this, and the public, by degrees, came to look on dentistry as a professional calling worthy of the best minds and greatest talents. As a result of this change of status in the minds of the public, the dental colleges of this period were overcrowded with students. The demand for more schools seemed imperative, and, as a natural result, many were organized, too many for the best interests of education. Competition of a commercial character, even more strenuous and active than before, took possession of many of the colleges, and some of the weaker schools, feeling that they were being crowded to the wall, opened their doors to any who could pay the fees, promising to graduate them at the end of two courses of lectures. In many instances students were graduated after one course of lectures, and, to our shame be it said, diplomas were issued in some instances to men who had only attended a sufficient number of lectures to identify themselves with the graduating class.

The courses of instruction in the dental colleges of this period were so diverse in subjects and study requirements that students had great difficulty in passing from one college to another, as the faculties of the different colleges often refused to give credit for work done in other institutions. This state of affairs became so unsatisfactory to the colleges and students that several of the leading schools issued a call for a conference of all the dental colleges, for the purposes of harmonizing the courses of study and arranging for comity between the schools and such other matters as should be of mutual benefit to all concerned. This conference resulted in the organization of the National Association of Dental Faculties.

The organization of this association marked a great epoch in the history of dental education, for through its deliberations and established rules, it has exerted a tremendous moral influence over the colleges, both within and without the association. It has kept the colleges within the association up to its prescribed standards for the admission and graduation of students, while those on the outside have been compelled by the state examining boards to seek admission to the association and place themselves in harmony with the requirements of its educational standards. It has brought order out of chaos, in dental teaching; it has harmonized the courses of instruction and has stopped the practice of granting degrees *in absentia*. It has made it possible for students with proper credentials to finish their course of instruction in any college that they may elect. It advanced the requirements for graduation from two to three years. It established an educational entrance requirement and gradually raised this requirement from nothing to a certificate of having passed the examinations of the second year in high school. It has introduced technic teaching in operative and prosthetic dentistry. It has improved and extended the curriculum from time to time by adding such important subjects as physics, embryology, general materia medica and therapeutics, general pathology, bacteriology, comparative dental anatomy, orthodontia, general and oral surgery.

Up to one year ago the minimum preliminary requirements for entrance to our dental colleges was a certificate of having passed the studies of the second year in high school, and for graduation, three full courses of instruction of from seven to nine months in each year.

Until three years ago this was the same standard as that required by the medical colleges. At this time the medical courses were extended to four years and the minimum entrance requirement was advanced to a diploma from a four-year high school. A few of the better class of medical schools now require that the student shall have passed the studies of the sophomore year in liberal arts or natural science, while one insists on the bachelor's degree.

At the present time the minimum preliminary requirements for entrance to the dental colleges, having membership in the National Association of Dental College Faculties, is a certificate admitting the student to the third year of a high school or its equivalent, while that for graduation is four annual courses of instruction of not less than seven months in each year. This, it seems to me, is a record of which the dental profession need not feel ashamed, and yet it should not felicitate itself too much over its progress, for much greater advancement might have been made in educational matters if the colleges could have been united in their work from the beginning.

A PROSPECTIVE VIEW.

The second picture, or the prospective view, must necessarily be one made up largely of personal opinions and impressions, but nevertheless opinions and impressions bred of many years of experience and general observation.

The great need of the profession to-day and for the future is, in my opinion, higher preliminary education and broader and fuller instruction in those fundamental sciences which make up the sum total of a dental education. The profession has done well in the past, but it can not afford to relax its efforts or to take a backward step, now or ever.

For many years the minimum preliminary educational requirements for entrance to the dental colleges were the same as for matriculation in the medical schools, but at the present time they have fallen somewhat behind. This, in my judgment, is a mistake, and it should be rectified at the earliest opportunity.

The requirements for matriculation and graduation in dental surgery should be in no way inferior to the requirements of the medical schools. The courses of instruction in the fundamental sciences should be the same, and during this period the medical and dental students in the great universities should be taught together, and no distinction made between them. By this plan better and more thorough work can be done and at much less expense. This saving of expense would make it possible to employ teachers at an adequate salary who would give their whole time and attention to teaching and original investigation, and as a consequence the teaching would be of a higher grade and the work of the student would be more enthusiastically performed.

What we need to-day and in the future is wide-awake teachers for the fundamental sciences, teachers who are full of their subject and who can impart knowledge in such a fashion that the student can not help being interested in these, to him, otherwise dry subjects. If the teachers of anatomy, physiology, chemistry, etc., are not enthusiastic in their work, the student soon loses interest in them, and turns to the more practical subjects to which he often gives time that could be spent to better advantage on the fundamentals, as he finds, to his chagrin, in after years.

In my work as an examiner for the Dental Corps of the U. S. Army, I have found that the majority of the candidates who have presented themselves for these examinations were deficient in preliminary education and in those subjects usually denominated as the fundamental sciences. In the practical departments they were as a rule quite well prepared. The best marks were usually obtained in operative and prosthetic dentistry, crown and bridge work and orthodontia. In fact, many of them were good jewelers, but lacking in that knowledge which marks the truly professional dentist. This is not the fault of the curriculum, for with the subjects that now comprise the courses of study in our better dental colleges the conscientious, hard working, well prepared student will receive an excellent professional education.

The most serious difficulties which the teachers of the fundamental sciences experience in their work is the lack of time properly to cover the subjects and mental deficiency on the part of a large number of students in every class, whose minds have not been sufficiently trained and disciplined by previous study readily to grasp or comprehend the sciences which they are en-

deavoring to teach. As a consequence, the instructor is obliged to suit his teaching to the comprehension and ability of these students, while those of higher educational acquirements, who could progress much more rapidly had they the opportunity, lose interest in the subject for want of a stimulus to study. This fault can only be corrected by insisting on a higher grade of preliminary educational requirements, and I most sincerely hope that the Faculties Association will not only raise these minimum requirements to graduation from a four years' high school or its equivalent, at its next session, but will recommend the completion of the sophomore year or a full academic training in the liberal arts or natural sciences, as the proper preparation for the study of dental surgery. It is possible at the present time for students of medicine to procure the bachelor's degree in natural science and the degree in medicine by combining the two years' work of the junior college with the four years' work of the medical school. The University of Chicago, the University of Michigan, the University of California and Cornell University now offer such courses, both degrees being conferred on the candidate after the completion of his full medical course.

This is a movement in the right direction and I can see no reason why the universities having dental colleges should not offer the same inducements to their students in dental surgery. With such a class of students the work of the instructor would be a joy, while the profession would gain very greatly by the addition to its ranks of a class of more highly educated practitioners.

A young man who has received a college training has usually been taught the principles of social and political ethics and is therefore better prepared to understand and appreciate professional ethics. Such a young man is generally imbued with higher standards of conduct and of living. He recognizes the ethical rights of others and demands that he be accorded the same rights. Such men are seldom guilty of conduct that brings reproach on their profession. They are seldom found in the ranks of the advertising quacks or those who selfishly patent a remedy, an instrument or an improvement in methods, which would be of benefit to suffering humanity, forgetting, or not caring, that nearly every remedy they employ for the cure of disease, every instrument they use, or operation they have been taught to perform, was thought out and perfected by some member of the profession who preceded them, and who freely and unselfishly gave these to their brethren for the benefit of suffering humanity. The profession needs more of this unselfish, better educated, truly professional class of men. It needs to stamp out the commercial idea and install in its place the true professional spirit which places our duty to our patients and the state first, leaving the question of the fee for future consideration.

The lengthening of the college course from three to four years will call out many differences of opinion as to how the extra year shall be employed. Those who teach the practical branches will want to extend instruction in operative and prosthetic technics, while those who teach the fundamental sciences will ask for more time and more thorough courses. The latter, to my mind, is at present the most important side of the question, and it should be given careful and conscientious consideration, for the future of the profession depends on how it is decided.

To obtain the highest degree of instruction the teacher must be a specialist in his department, and with the financial inducements that can be offered by the average

dental college such teachers for the fundamental sciences are difficult to obtain.

Specialists in the practical subjects of dental surgery are plentiful and, as a consequence, this part of the training of students leads the theoretical and the scientific.

The student is naturally attracted to those subjects on which he thinks he can see that his future financial success as a practitioner depends. He is, therefore, inclined, through mental shortsightedness and inexperience in the profession, and from his inability to comprehend its responsibilities and his duties to his patients and the state, to neglect those subjects which are of the greatest importance in the development of scientific dentistry, and hence to the welfare of his patients and the best interests of the state. He therefore devotes his energies to those departments which appear to him to promise the largest and most speedy returns in money for the time and study spent on them.

We are a nation of buyers and sellers. Commercialism dominates our people. Trade and trade interests rule the nation. How, then, can we find fault with the student if he partakes of this spirit of commercialism that he can see everywhere around him, that he reads in the newspapers, hears talked on the streets and in the parlor; sees in the bitter competition of some professional men, and can not help but know exists in the management of many institutions of professional learning?

The best interests of higher dental education demands that the management of these schools should be taken out of the hands of the individual or the teaching faculties and placed under the control of the state, or of the trustees of our great universities, for the reason that the majority of the dental schools to-day are still perforce commercial institutions, dependent on the fees of students and the profits of the infirmaries to maintain them and pay the teachers and demonstrators. Just as long as commercialism exists in our system of dental education the best results can not be obtained. The interests of the students should be paramount, but this interest is often obscured by holding the dollar too close to the eye. It is marvelous how small an object will obscure our vision if we but hold it close enough.

The first dental college was organized on the commercial basis, and I do not know of a single dental school, even those under state control, that are entirely free from some form of commercialism, for in all of them the fees of the students, or the receipts of the clinics, bear a more or less important relation, either to the salaries of some of the professors or demonstrators, to the buildings they occupy or to the apparatus or furnishings.

In most of the state institutions the appropriations are too small properly to conduct the schools, while in the colleges connected with the large endowed universities no endowments have been made to the dental schools. They are thus left in a measure "to work out their own salvation," in many cases "with fear and trembling," as I know from personal experience.

We could wish that the legislators of the states having professional schools in their universities would appropriate for their support with a more liberal hand; and that good people with fortunes they can not spend and do not know where to bequeath, would endow the dental colleges and place them above the degrading necessity of catering to the commercial spirit, and entering students who have not a proper educational qualification to begin the study of dental surgery, or who are deficient

in that peculiar aptitude for a professional life, through which alone they can hope to develop practitioners who will be an honor to the institutions that are responsible for their education.

I have confidence to believe the day is not far distant when all of the dental schools will either be liberally provided for by the state or abundantly endowed through the munificence of a Rockefeller or a Carnegie. The American people are liberal and just toward all educational efforts, and whenever they are convinced that the best interests of the citizen and the state demand that they render financial assistance to any individual enterprise, it is usually forthcoming.

Another serious drawback in our system of education is the failure to provide advanced standing in the dental course for students who have taken the bachelor's degree in liberal arts and sciences.

These students have had a sufficient amount of didactic teaching and practical laboratory instruction in chemistry, botany, morphology, physiology, zoology and comparative anatomy, etc., to more than equal the work of the freshman class in the dental schools, and under these circumstances their higher preliminary qualifications should be recognized by advancing them to the sophomore class of the dental course. By adopting a policy of this character ambitious students would be encouraged to complete their academic training before entering on the study of dental surgery.

As the matter now stands, the college graduate is placed on the same footing as the student whose qualifications are only those of a second year course of a high school, and the extra six years of study pursued by him in the languages, mathematics, literature, history and the science, count for nothing. This is placing a premium, I was about to say, on ignorance, but I will modify the statement and say, on the minimum requirements for matriculation, and thereby turns away many young men from the doors of the dental schools who would have been an honor to the profession.

I am constrained, also, from my sense of justice, to make another suggestion, namely, on the matter of advanced standing for medical graduates. Since the adoption of the four-year course for medical and dental colleges there would seem to be no good reason why medical graduates who have taken a full four years' course should not be advanced to the junior grade of the dental colleges.

The four years of training of the medical graduate, preceded by a full four years' high school course as a minimum matriculation requirement, is certainly equal to the freshman and sophomore courses of study in the fundamental sciences as taught in the dental schools, preceded by only two years of the high school course as a minimum entrance qualification. It would therefore seem no more than a just recognition of the scientific work performed that he should receive such advanced standing in a dental course. If such students, devoting their full time and energy to the study of the purely dental subjects for two years can not make as good operators as their fellows who entered with the minimum qualifications and have spent four years upon the dental course, then the value of higher education as a prerequisite for professional study is a myth and a snare.

Let us look at this matter in a reasonable light and place ourselves on record as favoring the proposition of giving due credit for scientific work performed by candidates for matriculation who hold the B.A., B.S. or M.D. degree from colleges and universities of recognized repute. Scientific knowledge is of as much value

to the dental surgeon as it is to the physician and the surgeon, for without the employment of this knowledge in his profession, the dentist is nothing more than a handcraftsman.

DISCUSSION

ON PAPERS IN SYMPOSIUM ON DENTAL EDUCATION BY DRS. EAMES, CHITTENDEN, BALDWIN AND MARSHALL.

DR. EUGENE S. TALBOT, Chicago—Anticipating that something might be said in the chairman's address in regard to the length of term in the dental colleges, and the position that would be taken at the meeting in Washington, I wrote letters to Professor Eliot of Harvard and to President Harper of the University of Chicago, asking them to prepare papers for this section. President Harper was unable to comply with my request, but I have a letter from Professor Eliot, which I will read at this time.

Dear Sir: I shall not be able to attend the meeting of the Section on Stomatology of the American Medical Association at Atlantic City, June 7-10, 1904. The proper person to state the position of Harvard in regard to the future policy of its Dental School is the dean of that school, Dr. Eugene H. Smith, 283 Dartmouth Street, Boston.

The policy of the Harvard School is not commercial in the least. It is steadily endeavoring to raise the standard of dental education, and has in a good degree succeeded. Just now it is trying to raise the standard of the admission examinations to the school, and is finding that a difficult task. It can not add, at the same time, to the length of its own course. Moreover, the school has been struggling for several years to maintain a close connection with the Harvard Medical School. The task has proved difficult because of the rapid improvement of the Medical School consequent on its admitting none but the persons who already hold a degree in Arts or Science. The Dental School must accomplish both the tasks to which it has set itself before it can lengthen its course to four years. The Section on Stomatology may rest assured that the Harvard Dental School will continue to do what it always has been doing—namely, contribute to the improvement of the preparatory course for the dental profession.

Very truly yours,

CHARLES W. ELIOT.

I am sorry to say that Dr. Smith can not be present, but Dr. Briggs will give us some idea of what the school will do.

DR. E. C. BRIGGS, Harvard Medical School—I am sorry that Dr. Smith can not be here to give you the best idea, and as it was only a few days ago that he told me he could not be present, I have not been able to make any real preparation or collect any special data. I can, however, point out one or two things and state a few facts which I hope will impress on your minds the idea that Harvard is not blocking in any way dental education. In fact, it seems ludicrous that others should have placed her in such a position, when she has always been struggling quite the other way, and, I may say, struggling against her own commercial interests. We have decimated our classes time and again by the advances we have made over other schools.

The question is, What elevates the profession? We speak about the progress we have made, but we lose sight of what really elevates the profession as a whole. There are plenty of men in the profession to-day who have elevated themselves as high as any one could wish, who have not had any particular preliminary training. They have had the genius and have made the geniuses, but that does not raise the profession as a whole. That is the feeling that we have at Harvard. To set the profession right before the world, attention must be given to the character of the men and their scholarly attainments, and that is the reason we have paid so much more attention to preliminary requirements than we have to the length of the course. The length of the course is a little misleading. It is four years of seven months; Harvard already has three years of nine months. We are only one month short. With that, and with our entrance requirements, we do not feel that we could wipe out our school altogether. We have about cut it in half now, and what better evidence can you have that we are not commercial? If we were commercial we would take in some of the men who come from other colleges who write to know what their position will be on coming into our school. Not one has accepted, because we say, we will give you time allowance, but you must pass every examination before you can graduate. That is not what they want, and they do not come. For the post-graduate our terms would be entirely different. That does away with the suggestion that our line of thought is due to any commercialism. I wish that you would send, as we have

done, for purposes of comparison, to the different colleges, and see what their examination papers are and compare them with ours. Not one man out of ten with a high-school education can come into our school. He must pass the examination with ability to go into college—not twenty-four points, but as many points as he goes. He has got to pass just as good an examination as if to enter Harvard or Yale—I speak of them because they are nearer. So it seems to me that Harvard has been put in an unfortunate light, diametrically opposite to what she really is at heart. The time that a man is in a professional school is of great value to him; we appreciate that as much as anybody else—I do not believe ten years would be too much, if you wish to reach the highest ambition of life. The idea is, that having provided a certain amount of good training, which we think we do in three years, the next best step is to have the man who comes into the school one who is already a scholar and fitted to take up any of the liberal professions. You and I are helped just as much by that uplift. We can not stand back and say we did pretty well and that we only had “reading, writing and arithmetic.” If the standard is raised by making it necessary to have something more than that, you will get professional standing. The profession will not make its highest success until the men who come into it are men of education and scholarly attainments.

DR. WILLIAMS, Boston—One of the things which I thought I would object to in teaching in Harvard was that I would have to teach with men who were not prepared to learn. I am glad to know that the standard of the examination has been advanced so that the students are better able to learn. The preliminary preparation is necessary in order to know how to learn to the best advantage.

DR. TRUMAN, Philadelphia—I feel in a somewhat embarrassing position, coming down here as if we were going to attack Harvard. That is not my purpose. So far as I am concerned, I want to advance dental education along the best lines possible. In 1884 we organized the Association of Faculties, and for twenty years we have worked steadily to bring up the standard of education to four years. At Asheville last year, when we supposed we had established that, without any prospect of its being changed, we received a blow from the very highest educational center in this country—Harvard. They requested that they should be given the privilege of three years, because they intended to advance the preliminary standard to the A.B. degree eventually, and for that reason and for the higher standard which they claim at present, they believe that they had a right to a three years' course. I was chairman of the committee which took that matter in charge, and we could not, under the circumstances, agree to the proposition, because other universities in this country had practically the same standard and the same length of time. Now the action of Harvard on that occasion was an encouragement to the commercial schools. I know very well that Harvard has never been a commercial school. No one can charge Harvard with that. It has always been exactly the contrary, and that is why I was astounded at that time at the action of Harvard. After they left the Association of Faculties we heard that we were to be met, first at Buffalo and in a day or two at Washington, with the commercial idea of going back to three years because the schools can not maintain themselves. Now, Harvard may not have meant this. Harvard did not mean it, but at the same time that influence has been an injury to general dental education in this country, and I don't see how Harvard can explain it.

We have had this afternoon a good deal that is of value in these papers, and as a rule I am in with them, especially with the paper of our chairman. I agree with the proposition that the higher in a general way you can educate a man the better, but you must have that education properly arranged in order to be of value. The idea to me is pre-eminently absurd to suppose that because a man has an A.B. degree that he is qualified thereby to become a dentist. It is a fallacy. The high-school degree is equally fallacious. What we need in dentistry is an education that will fit a man to become a dentist. If he is to be a dentist he should come up from the mechanical school, through the higher schools, and then reach

a point where he can be of value to himself and the community at large. There is probably not a man here in this room who ever had more than two years of four or five months' study in the professional schools. I do not believe that we can make dentists out of all men, whether they have the A.B. degree (and we have a number of them) or whether they have the high-school degree; that is not the point. We must go deeper if we are going to have symmetry in our educational effort. My own idea has been that the poor dentists we have turned out have, as a rule, been men of higher education—not the fault of the higher education, but the fault of a lack of proper symmetry in that education. Let me illustrate: I had two boys to educate. One was my own son, the other a nephew. My own son I insisted should take a six years' course to acquire a proper classical education. He graduated with the highest honors of the university and with nothing in anything else. The other boy was mechanical. I insisted on his going through the manual training and from the manual training school to the university, and from the university to a post-graduate department in one of our large manufacturing establishments, making nearly eight years in his particular direction, and at the present time, at thirty years of age, he is superintendent of motive power in one of our largest establishments in Philadelphia. My own son became a teacher. That is what I mean by symmetry in education; training the men from the very beginning so that they can practice whatever they expect to be their calling, and not supposing that because a man has an A.B. degree or any other degree of that character, that he can go into a dental school and become a dentist. The thing is an impossibility and a fallacy. This very day I have before me large numbers in our own university who are utterly unfit to practice dentistry, and it is a source of tribulation to me that I have to meet that sort of thing. They have not been properly trained from the beginning. They have not the manipulative ability that ought to come with good practice, and they will never get it, because they have reached an age when it is impossible that that shall be perfected in the individual. If we are going to advance education we must look at it intelligently. Let us come down to practical matters. Let us take our own experience, the experience with me that covers nearly half a century, and we know it can not be done in this way. Harvard will not do it, because in the first year Harvard ignores almost entirely the technic of dental education. In the old laws regulating mechanical work in my own state, young men had to go into apprenticeship, working for four or five years until they reached their majority at 21, before they could practice any of the mechanical trades. Then they were skilled in their work. Here we are trying to turn out men in three years in one of the most complex mechanical professions that I know anything about in this world, that of dentistry. We would turn them out with a fundamental knowledge of anatomy, bacteriology, histology, etc., and the mechanical training almost entirely ignored. Is that what we are here for? Are we here for that purpose alone? If we are, then I am not a dentist.

DR. WILLIAMS, Boston—Dr. Truman is right in his views regarding the manipulative qualifications of a dentist. It is necessary that they should be trained properly and early. I have known some of the best manipulators to be the greatest failures in their operations from not knowing when and how to exercise their manipulative skill. I have known of one or two instances of fatal result, from very high skill misplaced.

(This discussion is to be continued. As the issue of June 25 is the index number, it will be continued in the issue of July 2.)

Medical Study Trip to the German Spas.—The fourth German study trip for physicians will include this year the watering places of *Johannisbad*, *Salzbrunn* and six other resorts. The party will assemble at *Görlitz* September 7 and disband at *Breslau* eleven days later. The total expense for the trip will be about \$34. The sanatoria and convalescent homes at *Görsdorf* and other points on the route will be visited and also the model miners' quarters at *Waldenburg*. Further particulars may be learned on application to Dr. W. H. Gilbert, *Baden Baden*.