any educational as well as ethical standards on which they are agreed to be of one mind.

While the Faculties Association's rules give the individual college absolute control over the behavior, standing, advancement and transfer of the entered students—thus making it impossible for one of them who has fallen short of passing muster in one college to be admitted to another school without the full consent of his alma mater—while, I say, all this obtains after a student has matriculated and been given standing, there is at present nothing to absolutely prevent a man whose credentials have been refused by one school, bobbing up serenely before the dean of another school, and having standing given him on the same credentials. This commercial and competitive temptation, which is the chief obstacle in the way of successfully establishing a uniform advanced standard requirement, can easily and only be overcome by such wise and careful legislation on the part of the Faculties Association as has distinguished it in handling many other no less delicate questions. In the many discussions of this subject of preliminary education the argument has been made, and stoutly supported by facts, that a large number of the most eminently successful of our professions are men who had practically no educational opportunities before embarking on a professional career, and, therefore, that to set a fixed and arbitrary standard would in effect often bar out those who might become, with opportunity, shining lights. Of course, all will admit that such men would be much better equipped with proper educational preparation, and indeed for such very good reason every fixed standard that has been agreed upon or that is contemplated for the future, is modified by the words, "or its equivalent," to give the aspiring student his chance—no matter if his educational opportunities have been curtailed by environment.

How shall a fair, honest judgment as to what constitutes the equivalent of any given standard be secured, and who shall pass such judgment? On this question being properly answered hinges the successful establishment of any prerequisite standard. All will admit that however well equipped a man may be as instructor in any branch of dental education, yet, by that very fact, he is sure to be at least rusty and out of practice on public school examinations, and certainly the college teacher will admit that the politically appointed examiner is likely to be fully as unfitted as himself. Did you ever have opportunity to examine a bunch of material filed with a college dean, called matriculation credentials? It is a startling object lesson, and a few samples will exemplify the plausible expedients resorted to (and, it is to be feared, too often successfully) by men wholly unequal to meet the published standards of the schools they wish to enter. Ambiguous letters from interested teachers and complacent county superintendents, carefully framed to seem to cover the standard demanded, but really as untruthful as the serpent's reply to Mother Eve, "Yea, hath God said."

Mind, the new Rule VIII, jointly adopted at Niagara in 1899, provides thus: "The preliminary examination to be placed in the hands of the State Superintendent of Public Instruction, as adopted by the State Board of Missouri." Manifestly—since it is not to be presumed that the dental profession has the power to prescribe special duties for any state officer—the intention and expectation was that the State Superintendent of Public Instruction for each state having dental schools should be requested to select and appoint some person specially

fitted, in his judgment, to pass upon credentials and properly conduct the preliminary examinations of intending dental matriculants in the colleges of that state. Of course the State Superintendent is a "political creation," but his special appointee for this particular work may practically be satisfactorily agreed upon between the college and the state board. Thus would the college dean be relieved from the ever-perplexing responsibility of passing upon all sorts of so-called credentials, such as every dean has presented to him—credentials many of them so plausible as to easily pass muster if only casually scanned, and which the dean feels certain, should he refuse them, would be cheerfully accepted, along with the student and the fee, by another dean somewhere.

Eliminate all this. Make it absolutely impossible that a matriculant can be given standing in any college on credentials, until these credentials shall have been passed upon, 1, by the accredited representative of the State Superintendent, and then, finally, accepted or rejected by the joint conference committee of college and board. Make their decision, in the interstate and intercollegiate sense, final, and add, if you choose, a reasonable probationary clause providing the applicant a way to make up his shortcomings without abandoning the study of dentistry. In other words, make the general rule jointly accepted at Niagara, practically effective and universal by the two National bodies formulating specific rules for its application in every state, territory and district where a dental school exists. This plan has been successfully operated in more than one state and if it, or some other one equally practicable, could be inaugurated and applied to all schools alike, one of the chief temptations to commercialism and competition rather than emulation, would be eliminated and each school would stand or fall accordingly as its intrinsic merits command recognition.

LICENSING.

I. BY EXAMINATION. II. BY DIPLOMA.*

J. A. LIBBEY, D.D.S.,
PITTSBURG, PA.

There should be no other requirement for entering upon professional work than a diploma from a college chartered by the state for the purpose of educating students, whether it be a classical course or upon some special branch, employing well-qualified teachers, who are thoroughly in earnest in their work and loyal to their profession, and are desirous to see only those who are thoroughly competent, enter it; who count the qualities of the student of more value than the profits of the institution.

It is evident that the schools are not all conducted on a basis like this, for the reason that there must be sufficient funds to defray all expenses, including the assistants' salaries, and sufficient dividend to justify the faculty or incorporators for the valuable time taken from their practice; not considering the added tone and dignity of being called "professor"—which is frequently used for profit.

The question arises: "How many students can we get at a certain rate each?" If one hundred are secured it will be difficult to get sufficient clinics for demonstration; how will this be accomplished? The usual way is to urge the students to solicit, not among the poor and

* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

needy, but among their own class of people, who are usually able to pay a fair fee, to a young man who is struggling to build up a practice; and as this business or commercial spirit increases the higher motive of professional education is lost sight of. What is more unprofessional than this manner of solicitation?

"A chain is no stronger than the weakest link." If license by diploma is accepted then the poorest school sets the standard for all. Hence the necessity for licensing by examination.

The necessity for examination is not a new idea; it can scarcely be called a modern one, for in 1700 a French writer urges the necessity of examinations in France for the practice of dentistry.

The history of reform in the dental profession in England, by Hill, conclusively shows, not only the necessity requiring examinations, but also the advancement from a scientific and professional standpoint, by which the people were the beneficiaries. On page 86 he quotes the remarks of the president of the Odontological Society (the late S. Cartwright): "It can not be doubted that a liberal education is of the greatest advantage to those engaged in practice, and the more education is extended in all ranks of society the more it becomes necessary that the members of our profession qualify themselves as highly as they can. For those who employ their services in these days have a right to look, and do look, to the qualities of the mind as well as mechanical adroitness of the fingers."

The main object of the above society was to unite members of the dental profession into a recognized body and provide a means of professional education and examination.

In nearly every criticism on dental legislation, or State Board of Examiners, the author gives the impression that the laws were passed for the benefit of the profession; if such were the case they should be repealed, as class legislation is in direct opposition to the principles of our government. The laws were made for the people.

Most of the Christian denominations require examinations for license; the medical laws are similar to ours, and the profession of law requires the same. In the writer's state (Pennsylvania) a law student must pass a preliminary, and after graduation must pass an examination before a board appointed by the court, the only persons competent to appoint that board.

The representatives of the people recognize the necessity of passing laws for their protection from the incompetent practitioners.

The best means possible should be adopted to test the qualifications of the aspirant to professional practice, and the most important is a judicious selection of competent examiners. As stated above, the court appoints the examiners for the law—they are the most competent to perform that duty, but would prove themselves unqualified were it required of them to appoint a medical board.

No one is competent to appoint a board for professional examinations except members in good standing in that profession. The difficulty of securing competent men for examiners in our profession arises from the necessity of their being appointed by the governor, thus making them officers of the state, and he being authorized to appoint, may be ill advised in the selection.

As the court is the representative body of the profession of law, and is competent, the only representative body of the dental or medical profession in the state is the state society, it should be a state society in fact as

well as in name, which is not the case in some states. It must be chartered by the state, and to be a representative body must be made up of representatives (or delegates) from the local societies throughout the state. Act of 1897, Pennsylvania, gives the power of appointment to the governor and the selection to the state society (which is a representative body). Section 5: "The Pennsylvania State Dental Society may, at its annual meeting in 1897, and annually hereafter at said meeting, select as nominees the names of double the number of examiners required, who shall be members in good standing of the society, and transmit such names to the governor under its seal and signed by its secretary. From this list of nominees the governor shall, during the month of August, Anno Domini 1897, appoint a board of dental examiners. In case of failure of the said Pennsylvania State Dental Society to submit such list, as aforesaid, the governor shall appoint members in good standing of the said society without other restrictions. Each one of the said appointees must be a registered, bona fide practitioner of dentistry in good standing, and shall have practiced dentistry under the laws of this state for a period of not less than ten years. No member of a Dental College Faculty shall be eligible to appointment upon the State Board of Dental Examiners, but this shall not apply to membership in the Dental Council. The governor shall fill vacancies by death or otherwise for the unexpired term of said examiners, from the list of names submitted to him by the Dental Society."

Since the present law went into effect 823 applicants have been examined; these were graduates from 18 different schools. Of this number, 711 passed successfully and received licenses from the dental council; 112 failed to receive the required average. A fraction over 13.5 per cent. considering¹ "The measure had an *ex post facto* character, inasmuch as when it was passed many students had already spent two years in the dental schools, and in recognition of this fact the Board of Examiners has been lenient in the examination of applicants. This has no doubt aided in fostering good will toward the law. The influence of the work of the Board of Examiners has been beneficial, in that it has given a stimulus to the teaching in the schools and has induced stricter scrutiny of the acquirements of candidates for diplomas. Formerly students often sought the schools from which they could be graduated most easily, but now they prefer those that require a higher standard."

If the Board had marked the first two years, as they have since, the percentage of failures would have been doubled, as fully that number barely passed the required average—75 per cent.

Dr. John Sayre Marshall, president of the Board of Examiners for the Army, reported to the journals that out of a class of 14 applicants (the first to be examined) only 2 passed.

Is this not sufficient evidence that there should be a reform in the system of educating students for our profession? When the profession and the people realize the condition that now exists there will be no difficulty in getting laws passed that will be a real protection against quackery and contribute to hastening the time when the stomatologist will take the degree of M.D., leaving the name "dentist" to designate those who do only mechanical work.

1. Extract from report to the Governor.

DISCUSSION ON PAPERS OF DRS. CARR, PARMELE, TURNER,
CHITTENDEN AND LIBBEY.

DR. EUGENE S. TALBOT, Chicago.—One important part of dental education consists in the appointment of state boards, as well as the quality of the men upon these boards. A great responsibility not only rests upon them, but also great power. These men should be selected from the state dental societies. Twice the number of men required should be selected and appointed (at least the number required by law) by the governor of the state. Good men are thus secured, their appointment is legal and it places the responsibility. The proper men can wield a great power, and they do as it is, but if they were qualified men, of high ideals, of education, the specialty would be placed where it belongs. I believe these men can control the colleges and place the entrance and financial examinations exactly where they should be. That the graduates are not up to the standard has already been shown in the examinations made in the army through the National Examining Board for the Army and Navy. I have received a letter from Dr. Marshall in which he says 42 graduates have been examined and only 11 have passed. This shows the graduates of our dental schools are certainly lacking in some particulars. This has already been noted in an editorial in one of the journals, showing great interest in the symposium of last year. Dr. Marshall's report shows something more is lacking, and no doubt the agitation of these subjects will be productive of much good at the next meeting of the National Association in Milwaukee. This editorial hoped the men would not return to their homes without advocating the introduction of a four-year course in every dental college and I believe the time is coming when a four-year course will be demanded, thus giving the student a firm foundation for his life career.

A four-year course will necessitate a better understanding of the subjects the teacher has under discussion. Pathology, of which the student and the profession alike know very little, will and should become one of the principal branches. The bacteriology of the mouth, a great factor in diagnosis, is really a department of dentistry, and yet the first principles are scarcely taught or understood. The etiology of diseases of the mouth is yet in its infancy, and the coming dentist must not only be a "pluggers of teeth" but an all round pathologist.

DR. VIDA A. LATHAM, Rogers Park, Ill.—I think the solving of the whole question comes with the preliminary education—registration. The candidate enters the Northwestern University, the Chicago Dental School, or any other dental college. The candidate applies for entrance just as those Dr. Chittenden has mentioned, and is permitted to register, let us say, on a high school or university diploma. The city of A has a good high school whose certificate indicates a sufficient preliminary English education. But another candidate with a diploma from the schools of the town of C can perhaps hardly do more than write her own name! There are all kinds of universities and high schools, unfortunately. Compare the schools and universities of Duluth, Chicago, and New York with those in certain other places. How can you make them equal in subjects or standard? Yet any of their graduates might register in a dental or medical college on these diplomas, however unequal their qualifications. The trouble is in standardizing the elementary requirements in every case.

There is another thing to be brought out in this connection. Supposing I advertise; supposing I am a quack! The College and state board do not take my diplomas away for misdemeanor! I can move into another state and practice again! These are the things that should not be tolerated in this country, especially as it is doing damage to our colleges. We meet with this matter of diploma everywhere.

DR. R. R. ANDREWS, Cambridge, Mass.—There are a few words I wish to say in regard to raising the standard of the examinations of the boards of registration of the different states. In New England they are trying to equalize the examination in each state, so that a student may take the examination in one state, and practice his profession without taking another examination in any of the New England states where he may wish to practice. This reciprocity among the states is what the profession at large will demand. Public opinion in

the profession is strongly in favor of such a movement, and if the National body will adopt a standard and live up to it, a man who shall once pass a state board can have the privilege of practicing in any state in the Union without further examinations.

As the law stands to-day, a man may pass a creditable examination in all points. At the end of five or ten years, on account of sickness or something else, he is compelled to go to another state, where he expects to practice his profession. He has his diploma, which he has earned, and his certificate from his state board, stating that he has been examined and found worthy. He has passed five or ten years in honorable practice, and with this record he should be allowed to continue without further examination; but as the law stands to-day, this man, with all his experience, has got to go before the board of that state and pass an examination, the same as the young man just graduating. What we want, and what the profession will soon demand, is that a man having once passed a creditable examination of the state examining board in one state, shall be allowed thereafter to practice in any.

The National Board should consider the matter of giving to the different state boards certain rights, in considering cases where a man has been engaged in honorable practice for twenty or thirty years, and who is obliged through illness to go where he is ordered by his physician to regain health. I have in mind the case of one of the founders of the Harvard Dental School, a man of thirty-years' active and honorable practice, one of the most able operators in the city of Boston, and respected by all who knew him. He was ordered West by his physician. After awhile he was called before the state board of examiners and candidly confessed that he could not pass their examination in chemistry, bacteriology, and other scientific courses presented, but stated that he could give them abundant testimony of his ability to practice his profession. He did not take the examination, but came North, and took a college course which admitted him to practice. The board is established to protect the public; can anyone doubt that with this gentleman's high standing, eminent ability, and years of experience, he was unable to fulfill every demand?

I have in mind the case of another who was graduated from one of our special schools in Boston. He went to Germany, and was in practice with his brother for a number of years. He is a fine operator; he is so good a mechanical operator that he is to-day employed as one of the instructors in that department of one of our schools. He is a very nervous man, who is easily rattled by an examination. Coming back to this country, and wishing to practice, he went before the board, but became so nervous that he could not pass the examination. In this case, there is no question but what the public would be well treated if he had been registered. I am myself an advocate for a good solid examination, but the examinations given by some of our boards, especially by new men who have recently come in, have in some cases been severe, with catch questions. It has been acknowledged by members of the board in our own state that it would be very difficult for them to pass their own examinations. It is a fact that a member of the board of a neighboring state was compelled to move to Massachusetts, tried the examination and was turned down. This question is one of great importance. There must be reciprocity between the states, and the sooner this matter is considered by the National Board, the better.

DR. CHARLES CHITTENDEN, Madison, Wis.—I think there is scarcely a board in existence that does not consider the number of years a man has had in practice. In Wisconsin our Board has in its code of rules a rule something like this: "Candidates having had ten years or upwards of practice immediately before applying for this examination shall be required to pass only a 50 per cent. examination." I think that rule applies in a majority of the states.

DR. GEORGE J. DENNIS, Chicago.—I am not actively engaged in the work of dentistry at the present time, but the raising of the standard of dentistry is something that always appeals to me. The question came to my mind as I listened to a paper that was recently read, and it also appeared recently in the papers, as to what would be the remedies for raising the stand-

ard of dental education. We have talked about dental education for years, and I believe the subject has been often brought up in this Section. Is it to be remedied by law or simply by the good intent of the majority of those who have this matter in charge? By that, I mean the faculties of the different schools or the members of the state examining boards.

The matter of requiring a dentist going from one state to another and failing to pass the examination of the board of that state, it seems to me, is entirely wrong on the part of our examining boards. They seem to fail to recognize that years of labor and years of reputable standing in a community count for very little compared with the examination simply. Examinations of a dentist's ability, as a rule, do not amount to much. I think that is recognized by medical men generally. Oftentimes an examination shows but very little of what a man is capable. This is recognized by examining boards in hospitals. Often in connection with the examination they will take into consideration not merely the quality of the paper that is presented, but the quality of the man, his moral standing, his standing in the community, and his ability in lines outside of mere memory, and the actual tests by presenting human cases of his ability. It seems to me that a dentist who has worked for years in one state ought to be valued for his manipulative ability very much more than to have his standing judged entirely by a written paper.

In regard to the matter advocated in one of the papers, of paying for the work of the examining board by fees from the candidates for examination, I think that method has been so thoroughly tested and proven a failure that it seems to me entirely out of the question to consider it here. The people are the ones who should bear the burden of expense. They are the ones who are being protected by the examining board, and they should bear the expense of the examination.

DR. J. R. CURRENS, Two Rivers, Wis.—I am not a dentist, but I am a member of the Examining Board of Wisconsin. We had a meeting of the representatives of the Examining Boards of the United States yesterday in which these matters came up, and what impressed me here to-day is in regard to reciprocity between the different boards. I think if something can be arrived at, and if our laws can be so framed that they give the boards the power to recognize licenses from other states, I can not see but what it is the right thing to do. In the medical profession we have a little more difficulty than you dentists have. We have three or four schools to contend with, and the situation is a great deal more mixed. We have on our board two regulars, two homeopaths, and two eclectics. After July 1 we will have to take on one of our manipulative friends. In regard to this reciprocity business, there are many men who have grown old in the profession, their family surroundings are such, the condition of their health is such that they have to have a climatic change, and it is a great hardship to those men to put them through an examination. The matter of diplomas and examinations came up here this afternoon, and I believe in the medical line we are worse off than you are in the dental line. It is very hard for the State Board of Wisconsin to tell about the standing of a medical college in Alabama or Tennessee. For example, these schools will get out a curriculum that one will read with admiration, but they will take almost anything in the way of entrance requirements. Under our law we can require a diploma and examination both, and we will have such under direct control. It is all right to use a diploma if you know it is from a reputable school, but you can not have a class legislation, and there are very few boards that are allowed to use their discretion unless they have an investigation, which is a rather difficult piece of business. Most boards have to be self-sustaining, and it would be an admirable thing if they could prevail upon the legislators to make the concession, but it is difficult to make them believe that it would be for the benefit of the people instead of the medical men and the dentists. They want us to be self-sustaining, and it places us in a rather bad position sometimes. There was a flaw in our law in the revision of the statutes, so that we could not even send a man out to investigate a case without calling the whole Board together. We had a reserve fund of \$1200, and the result was that we had to turn it into the treasury. We tried

to get it back, but could not do it. We had no money to investigate anything; the state has the money, and it will stay there.

To my mind, the solution of the whole matter would be this: In the first place, raise the standard high. See that the primary education is brought up to a high standard. In regard to the high school standard which has been referred to, we have a clause in our medical law which provides that the high school standard must be up to the high school standard of our state. In that way any difficulty can be obviated very easily. One medical college fought very hard against the high school standard, and we had to cut it down to the junior year, but we expect to raise it two years from now. We have got to go slow in these things, and in this reciprocity business try to get the state laws on the same plane, and if we all join hands the matter can be accomplished. The laws are queer things to handle. There is that word "reputable" that is in the law. If a man is from a reputable college, the board has some discretionary powers, but if you get too particular about it, the board may decide you are a little too strict. It is a hard thing to learn the ways of the law. We had a case before our Board. Our law of 1897 was a very fair law. A disreputable individual took several courses in some Omaha medical college, and they refused him graduation. They pretended he did not come up to the standard. The fact was he passed a good examination, but it was on account of his moral character they refused to graduate him. The result was he went to St. Louis and graduated from the Barnes Medical College. He then went to North Dakota, and the Secretary of the State Board of North Dakota wrote to our secretary that the man was disreputable and doing all kinds of dishonorable things. He ran a lightning-rod business. He would go to a farmer with twelve children and tell him if he would give him a note for \$100, he would take care of his children for twelve years. He took notes and sold them to some banks. He did the same thing in Iowa and Nebraska. Then he came to our state and wanted a license, and we refused him. We supposed our law was all right, but there was a revision of the laws in 1898. Our Board was a little afraid about those session laws of 1898, but we supposed they were all right, but they changed the wording somewhat and the punctuation, thinking it would come out all right, but if you take these things before a jury they do not always come out as expected. The case came before a jury and the fact of the matter was he beat us and we were obliged to license him. Now, he threatens us with personal damage suits.

DR. R. H. NONES, Philadelphia—I am interested in the symposium and the various talks I have heard, and the whole question is a matter of cause and effect without arriving at the proper remedy. There are some apparent remedies, but to select one that would answer every case is a difficult thing to do. If we do seemingly find a remedy, one problem succeeds another until we find it is impracticable. How would you take care of the older practitioner if he wanted to move from one state to another? That would immediately be fought in some states that did not want a man to come over from another state, and that brings up the question of the survival of the fittest. It is a very well-known fact, yet a very sad one, that if a man has been in practice for some years, and he may be a young man, too, he neglects many of the theoretical branches which the examining board compels him to take. Now, if that man has not taken such an examination that is demanded of the younger men, I do not see how you could get a state board to pass him. It would be somewhat retro-active, to my mind, because he has had the opportunity to have had those qualifications which should fit him to go on in advance of this younger man. It acts in this way, you may say. Many a young man who, as has been suggested, might make a very competent dentist if he had those qualifications in later years. Why should not that young man have this same privilege to enter and bring up the necessary qualifications as the older man has, where you give him credit for forgetting his earlier qualifications? I say this problem and many similar problems have come to me. We have tried to get too many things instead of getting one good thing at a time. We started with too many things we wanted, and received nothing. I believe had the Association of Dental Faculties incorporated into their act or law, or whatever it was that was passed, a curriculum that should have been passed by the

student, his preliminary education would have been much better than by grading the standard to one, two or three years, whatever it may be, of high school. With all the careful thought of these gentlemen they little, I suppose, thought that immediately it was entered upon the question would come up: What is one year of the high school in one state or another? Immediately that trouble arose, and it has been one of the very hardest things to contend with in colleges.

I can verify Dr. Chittenden's remarks in regard to qualifications; I have seen them in all forms. When students presented credentials to me, I have invariably taken their credentials from them and told them I would send them to the Superintendent of Public Instruction to have them passed upon. I think by immediately taking his credentials from a man you can settle the matter for all time. If that credential comes back, I can follow him up in any other school and tell them they have no right to take that man. That is a thing for the deans to look into. The other gentleman who spoke made the point of a faculty being liable to be mandamus'd. That is a very strong point, indeed. You think you are treading on safe ground when your state board says to a graduate that he is not a graduate from a reputable institution. The question comes up: What is a reputable institution? In order to emphasize that point I will cite the case of the school I am connected with—the Dental College of Philadelphia. We had some difficulty to get our dental college into the faculty. They refused us admission, and we went to teaching dentistry under the charter of the medical college. We sent our students before the State Board, and they refused to examine them. We threatened them with mandamus proceedings, and after consultation with the attorney-general, they were compelled to examine our students; they passed the Board, and shortly after that we were admitted to the Association of Faculties. Other states refused to do the same thing, but they soon fell into line. We were in perfect harmony with the faculty, but the question arises: What is a reputable school? This is a very serious question, particularly the point of getting men whom you would like to see on the state board. Those men, as a rule, are very busy men; men who can not afford to give their time to such a work as this. It is not a pleasure. I have seen a great deal of it. I am acquainted with the State Board of Pennsylvania, and I know the amount of work they have to do. I say there is absolutely no pleasure attached to it. In regard to the matter as to how the men on the state board should be recompensed, that is a difficult problem. The class of men that should be on the board are difficult to obtain, because their time is of a great deal more value to themselves than the recompense they get from the state. I see no other plan except that of the fee being paid by the applicant. It is a matter of the utmost folly to ask the public to pay for such services by taxation. The question is whether they want protection. The general public does not want protection, as a rule. I went through one of the large department stores in Chicago, and it was a matter of surprise to me that in this large department store they are doing dentistry work at "Fair" prices. They claim to do crown and bridge work and such things, and that in the second city in the Union. If the public does not want protection in the large cities, what could you expect in the smaller towns, where you would expect to tax the people for this protection? Would they want it? I say most assuredly not.

There is another point that struck me while listening to these papers, and that is in regard to the matter of Dr. Marshall not passing some twelve out of fourteen. That casts somewhat of a reflection at first thought on the various schools throughout the United States. To my mind, it does not, because I look at it in this light, that the greater majority of those students that are passed upon by the examining boards have made up from one to two years, and you can see at once that it makes it difficult for those men to pass. Again, I say without any hesitation, I believe the majority of the state boards of the United States could not pass their own examination. I say that without casting any reflection, but I do not think these gentlemen have kept up with the various theoretical subjects. It is out of the question to expect them to do such a thing, and I think it would be a point of much interest had Dr. Marshall

told us whether it was the theoretical or practical branch in which they were lacking. I have always tried to find out the weak points of my students when they appeared before the state board, and tried to strengthen them on those points in college. I think that is a point the various state boards should give out. It would benefit the schools materially, and in that way the profession at large would be benefited.

DR. A. H. PECK, Chicago—Dr. Talbot has stated that state examining boards have power to regulate some phases of the individual college work, such as the preliminary requirements, etc. If Dr. Talbot's judgment is correct, and in a measure it is, I do hope the day is not far distant when the state dental examining boards may be placed in position where, by special legislation or advancement of public sentiment, or whatever the means, they may be able to successfully use the power that is placed in their hands that the entrance of students to our various colleges may be regulated and placed in the condition it should be, because we all know that the entrance of students to our colleges has not been what it should be. In other words, not to cast any reflections upon any institution, all colleges are pretty much alike in this respect. They pay very little attention, as a rule, to credentials presented by students. Many of them are private institutions, and are in the field for private gain, and whether or not the student who applies for admission possesses the necessary qualifications to carry him through lies with the powers that be. This is a demoralizing condition of things in this phase of dental education, and may the day be hastened when this condition may be eliminated and our institutions placed on their proper plane.

DR. CHARLES CHITTENDEN (closing the discussion).—There is no question about the power of examining boards, provided they have the dental colleges and the dental profession at their backs. Examining boards can do anything it is desired should be done for the dental profession in the matter of standards. As I tried to exemplify in my paper, there is no question but that the boards and the colleges together can do all that there is to be done in this matter. The difficulty has been in the past with the colleges and the faculties associations. For sixteen or seventeen years we have waited for the National Association of Faculties, who said that they would fix the standard; that they could be trusted, and that as soon as they had all schools in they would see that the standard was raised to where it should be, and that all these evils were corrected; but I think now, if the members of the Association were asked, they would admit that they have in the Association many schools that ought not to be recognized. Last year there was a school examined by a special committee of the Faculties Association, and a report brought in, which I had the honor of being permitted to see, prepared to be presented to the Faculties Association, but it was so scathing in many of its criticisms of the school that had been examined, that the report was withheld. I hope to see that report brought forward some day and the school properly dealt with. The Faculties Association feels it has a lot of weak schools represented, but it does not want to cause a disturbance, and the result is they have nothing by which to hold up the standard. They do not seem to remember that they should come to the examiners and join hands together and settle upon a standard; they do not stop to think that there might be a more successful method.

A gentleman said he would like to know in what branches the students were most likely to fall down. Our experience has been that students fall down first in simple anatomy. Next, they will fail on a dozen questions that almost any child in a common ward school should answer. That has been our general experience.

I desire to append the following letters, which speak for themselves:

Wisconsin, July 29, 1899.

"Gentlemen of the School of Dental Surgery.

"The bearer, ———, of this city, is a young man of good moral character and a very good student. In the year 1896 he was qualified to hold a second grade certificate to teach

school in ———, which was equivalent to a three-year course in the high school of this city.

“Supt. of ——— School from 1894 to 1896.”

“Dr. ———, Chicago, Ill., Dear Sir:

“Mr. ———, the bearer, impresses me as a young man in every sense qualified to take a dental course.

“He states that he completed the graded-school course and a portion of the first year of the high school course in the city of ———. Since then he has had several years of practical experience in a telegraph office in this city.

“Respectfully,

“Asst. State Superintendent..”

POST-OPERATIVE HEMORRHAGE.*

A. H. CORDIER, M.D.

President of the Mississippi Valley Medical Association; Professor of Abdominal Surgery, University Medical College.

KANSAS CITY, MO.

I know of no condition in my work that is more horrifying than to realize that a patient upon whom I have just performed an abdominal operation is bleeding dangerously. I know of no condition under which the surgeon will more quickly realize the importance of his work and appreciate more fully the great responsibility existing in every abdominal operation.

An avoidable accident to a patient that may result in the death of that patient is a very serious matter and should not be passed over as a trifling affair by the surgeon. Trying to give contentment to the sorrowing family and friends by assuring them that the all-wise Providence willed it thus may satisfy the unsuspecting and confiding family circle; but does it relieve the mind of the surgeon or save the patient?

The use of unstable ligature material on large pedicles and in localities where the same is quickly absorbed has cost quite a number of patients their lives from post-operative bleeding. It has been my misfortune to lose one patient from a post-operative hemorrhage, the cause being the use of a catgut ligature. After a large series of cases in which I used silk (I use it altogether now) without an accident of this character, I was persuaded to use catgut in a simple and easy case. This case was in a private residence in a distant city. Three hours after the operation my patient died from hemorrhage, the result of a slipped catgut ligature. I know that the ligature was responsible for this death. It should have been avoided. Dispensations of Providence are garments that may be used to hide the naked truths from an ever-credulous public, but before the eyes of the conscientious surgeon he sees the slanderous injustice of hiding his blunders under such sacred raiment.

That many fatal post-operative hemorrhages are unavoidable no one will deny, and it has been the experience of almost every surgeon to have had such. The recognition of the possibility of a patient's bleeding to death following an operation should only make the surgeon more careful to avoid it and to resort to the best method of speedily checking it when it has taken place.

There is no condition in which quick surgery is more essential; I mean by quick surgery, not alone getting at the work quickly, but rapid work after the secondary operation has begun. A patient who a few hours previously has gone through a severe operation, probably of long duration, or of a character to produce shock, is

not a very good subject to be given an anesthetic and undergo a reopening of the peritoneum. If the surgeon does not recognize this, the majority of his patients who are reoperated upon will die. No chronic or deliberate surgery can be tolerated by such a patient.

The use of the Trendelenburg position, while it enables the surgeon to see the bleeding points and to tie them most efficiently, may by gravity, in a patient with a weakened heart, keep a vessel from bleeding during the operation that may bleed profusely on the patient's assuming the horizontal position when placed in bed. This is especially true of capillary oozing from adhesions.

The drainage, as has been urged by Price and others, is not only valuable as a sentinel, but has a direct hemostatic power. All recognize the necessity of a clot, firm in character, to control oozing or even bleeding from larger vessels. Blood in the air-tight peritoneum, in the presence of a peritoneal temperature and abundance of lymph, will not coagulate quickly or at all firmly, as all will agree who have opened the peritoneum in cases of ruptured tubal-gestation or other conditions where there has been a free intraperitoneal bleeding.

A drainage tube in suspected cases for a few hours will do no harm and will surely give the indications of a hemorrhage. If the bleeding is from small vessels, the keeping of the peritoneum dry will be a potent factor in controlling the bleeding. Of course, the tube should not be used unless some reason is present for its use.

While the tube is of much use in suspected cases, its utility is lost in the case where a hemorrhage occurs in a patient in which such an accident is not expected. Thus, my three post-operative hemorrhages have been in easy cases where such was least expected. My other secondary operations for bleeding have been in patients of other surgeons. I was called in their absence, saving the patients in each instance.

The symptoms of a concealed hemorrhage are very much like those attending shock, and, if the symptoms alone were relied upon to make a diagnosis, many errors would result. The pulse is increased in frequency in both, and diminished in force equally in the two conditions. There is a sighing respiration in each, the features are pinched and the surface is blanched in the two, the skin is clammy in both, the patient is comfortable and indifferent in each, the pupils are dilated and respond slowly in either condition.

How is the diagnosis best made? Take, for instance, a fairly strong patient, remove an ovarian tumor from that patient, occupying from fifteen to twenty minutes in the operation. There are no adhesions, there is a small pedicle, a silk ligature is used, and the patient is put to bed in good condition at 9 a. m., with the pulse 80, the temperature 98 F., and with no shock. Now visit this patient at 3 p. m. the same day, and find her with pupils dilated, features pinched, free from pain, the skin white as marble, the lips shrunken and pale, the pulse 160 and very compressible, with a cold, clammy perspiration, all symptoms of shock or hemorrhage. Analyze the history of this case, and experience will say that a patient leaving the table in the condition of this patient, having had no evidence of shock or anything done to produce shock, has an internal bleeding from a broken or slipped ligature; the doubt, if any existed, should be quickly dispelled by cutting a suture and introducing a tube or an artery forcep.

Take another case: Extensive bowel adhesions have been separated in enucleating a growth, the operation is

* Read in the Section on Obstetrics and Diseases of Women, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.