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Dominion Dental Journal

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Original Communications

ADDRESS OF WELCOME—VERMONT STATE DENTAL SOCIETY.

BY DR. WARNER.

Mr. President, Ladies and Gentlemen:

I have been requested to extend to you, on behalf of the fellow members of our profession here in St. Johnsbury, a hearty welcome and greeting. It is our desire to assure you that we appreciate the honor you have conferred upon us by your presence here, and at the same time to assure you that we shall endeavor to make your visit among us as pleasant as possible. It gives me great pleasure to meet you all again. Many familiar faces are absent. Some have joined the great majority, and others have come to take their places. I sincerely trust that the Twenty-fourth Annual Meeting of this Society will prove a success in every point of view.

PRESIDENT'S ADDRESS—VERMONT STATE DENTAL SOCIETY.

BY DR. K. L. CLEAVES.

Ladies and Gentlemen of the Vermont State Dental Society:

It is my pleasant privilege and great honor, as president of this society, to welcome you this evening to the celebration of its twenty-fourth birthday. It may be interesting to note that this society was organized precisely twenty-three years ago to-day.

Through the instrumentality of Dr. Henry A. Baker, who is to be with us at this meeting, about thirty dentists met and an organization effected; its first meeting being held in the parlors of the Pavilion Hotel at Montpelier, March 21st, 1877. Dr. James Lewis, who has faithfully and devotedly helped and watched its progress through these years, was chosen its first president.

This, the twenty-fourth birthday of this society, whether it be the last of the nineteenth or its first in the twentieth century, should be celebrated as something eventful in its history. Imagine, if you will, this society in its progress onward and upward, called to a halt at this marking place, while we turn our attention to its influence in the past, and make plans for its further usefulness and development in the future. While we are called from labor to refreshment, as it were, upon the sublime plane to which this and other societies have led us, let us consider first of all what dentistry was before the forming of such an organization known as a dental society.

Without doing an injustice to the pioneers of dentistry, their methods of doing business and the motives which actuated them were most interesting, as compared with our present standards; their handbills and advertisements laughable in the extreme—I say laughable, because of their apparent sincerity and honest endeavor to excel in what was then a new science. Handbills and advertisements, etc., are not laughable with us to-day; they are malicious, because every *dentist* at the present time knows better.

It was not uncommon sixty years ago for those who entered the dental office as assistants, to be compelled to swear never to reveal the secrets there imparted. Of course there are certain things occurring in dental offices to-day, the secrecy of which assistants should not reveal; but I speak more especially *now* from a patient's standpoint, while under an anesthetic. I remember, even in my days of studentship, a dentist very cautiously imparted to me one of his secrets. It having been a secret so long now, I will tell it you: "Always wash your amalgam with spirits of camphor, if you want it to last till doomsday."

It has occurred to me since that he got it right, as I now understand what he meant by " doomsday."

Of course, secrets and secret-mongers did not die with the birth and development of dental societies, but have seemingly gone through a peculiar metamorphosis, from the fact, that the secret of their secrets is the secret of their humbugging with their pure gold, double jointed, quadruple attachments, known only to themselves.

I do not wish to be misunderstood in speaking of those who struggled under difficulties, and laid with skilful hands the foundation of which every conscientious and appreciative dentist enjoys to-day. We only have a record of a certain few in those days as great leaders, but they all had to depend upon their own originality and self reliance and had an uneducated public to contend with. When I say "uneducated public," think what it must have been, when to-day we frequently meet people who are well educated in most things, yet who will say, "my father or grandfather never used a tooth brush, and I believe the more we fuss with our teeth the worse they are."

This father and grandfather racket is annoying to us, but think what it must have been to them. Were it not the fact that the pioneers, such as Hudson, Gardette, Hayden, Parmley, and others, contained the right stuff, we would not be enjoying the plain sailing, comparatively, we do to-day. So much for the pioneers and dentistry of years ago. How is it to-day in this State? We have the people educated, most of them, to realize the importance of caring for their teeth. Pardon me for saying that they have been handled, for the most part, by good, honest, conservative dentists. Perhaps we fall far short of the high water mark in skill, yet we average well I hope, and we are honest. I do not beileve there is a so-called "d ntal shop" in the State of Vermont. If I am wrong, I am sorry; if right, *we*, and more especially the people, have much to be thankful for. Now, here is the one essential reason why every individual, reputable dentist in this State (and if he is not reputable he should be made so) should belong to the Vermont State Dental Society, and show his colors by attending every meeting or else offer a good excuse.

If a certain few had not assembled themselves together and organized this society and kept it alive by their constancy, would we have this favorable condition of things? Would we have had our good dental law? And working hand in hand with the society, the Board of Dental Examiners? Open the Dental Journals and read: "A meeting of the Vermont Board of Dental Examiners will be held at such a place, such a date, for the examination of candidates. The examination will be in writing, and will include anatomy, physiology, histology, bacteriology, chemistry, metallurgy, pathology, therapeutics, surgery, materia medica, anesthesia, operative and prosthetic dentistry, together with an operation in the mouth. Candidates must come prepared with instruments, rubber dam and gold."

Now, if a fellow has got the nerve to try and slide by a

"board," with all that looking him in the face, he will pretty near have the nerve, if he does get through, to be the making of quite a respectable dentist. I mention this to show, in part, what the society has accomplished. And here is another important reason why every dentist should belong to this society. There are mean men found in all departments of life, and unfortunately, some invade our profession. There is no certainty but that a sheep with black wool will, from time to time, slide by the "board." Now, if every upright dentist belonged to this society, and would pull together, they would soon have the black wool all pulled out, with him in the society, or he would be made to look almighty black on the outside.

We are menaced by "Dental Shops" some time in the future, and the public will have to be further educated in the difference between professionalism and commercialism. The enemy may not approach us soon, but we had better fortify the ground already gained, concentrate our forces, educate and discipline new recruits, and be ready for all emergencies. It is needless for me to try and put forth any further arguments in favor of organization. We all know the helpful influence the Dental Society has over young and inexperienced practitioners; how it cultivates and develops brotherly love, removes suspicion, and creates a source of inspiration, both in old and young. If we find a section or locality where the influence of society has not reached, we find jealousies, envy, slanders, and all manner of bitterness, but this has been known to clear away like Philipinos before our soldiers' aim. There is no man endowed with so much natural ability, skill and tact, with a head so full of brains loaded with knowledge, but that he can make just a little more of himself, by mingling with others in the same pursuit.

Every dentist needs something to lean against, something for protection. Look at the dilemma that most of us dentists found ourselves placed in, when the International Tooth Crown Company declared war. It was worth the price of admission to the Protective Association, for the relief of anxiety even for the time being.

We have good men in the society and good men out, but what we want is to get at the good men who are out of the society, and here lies the question, "By what means can we best accomplish our purpose?"

I am going to recommend for your earnest consideration that a committee be created by this society, and this committee to work in the capacity of a soliciting agent for the society. It occurs to me that a committee created and instructed to interview

all new comers and others who for some reason have not joined with us, would be very helpful and beneficial for all concerned. I would recommend that such a committee, if created, be given the freedom to act according to their own judgment, guided by the "code of ethics" adopted by this society. Such a committee should have the enlargement and improvement of the society constantly in mind, together with the feeling that it would be distributing society influence to those, who perhaps might not otherwise seek its aid. I believe that such a committee, acting as mediator, would do a vast amount of good, both for us in the society and those out.

Recognizing the fact there is very little done in this world unless there is compensation expected either in the way of money, credit, or honor, and, too, recognizing the fact that in committee work the bulk of the work usually rests upon the shoulders of one, it might be well to appoint but one member as committee or agent.

In this connection I do not agree with the Irishman and his whiskey, "If a little is good, more is better."

I fear that with a committee composed of three or more, each would depend upon the others with an ultimate result that not much would be accomplished, whereas, left in the hands of one, or one for the east and one for the west side of the State, great would be the outcome. I leave this now for your consideration, with the hope that some such committee be created before the close of this meeting.

I wish to say just a word in regard to a certain class of men, who, taken collectively, might well be called an auxiliary to our society. I refer directly to that much-abused and at the same time much sought after class of men, more commonly known as dental trade representatives. I say "much abused," because of their appearance at certain intervals, when it seems that the most they have to offer is a good plump statement of material had, used and trusted out. Of course they get no collateral, and hence the abuse. I say "sought after," because of a certain few indispensable articles we must have and don't get until, perhaps, three or four days after having received their card. Had they the good fortune to never carry statements already past due, and to be endowed with the faculty of apprehending situations, so as never to visit us when we are painfully occupied and to always appear when we are painfully in need of something, what a godsend they would be to the dental fraternity. But without the expectation of a No. 30, guage 22 K. plug hat, or a solid crystallized gold-headed cane, they are indeed a most important factor, both to the individual dentist and dental society.

I was present at one dental society meeting where the dental representatives were outrageously criticized and called down, for assuming the privilege of urging lax members of the profession to be present at the meeting. The affair at that time created in me a personal disgust, which has only been intensified since by recognizing the interest they have created in some, who perhaps thought they could not afford to leave their offices. No doubt their motives are selfish, but they are justified in indulging in selfish motives, considering the fine exhibits we have each year in connection with our meetings. And inasmuch as they modestly comply with all our requests, I feel that you all will join with me in extending to them our praises, for their energy displayed for the benefit to themselves and to us all.

TREATISE ON AMALGAM.

By John Hood, Boston, Mass.

Mr. President, Ladies and Gentlemen of the Vermont State Dental Society,—My paper is on amalgam and its alloys, also the history of the same. It may be of interest to a good many of the younger members of this society to know when and how amalgam was introduced into this country. In obtaining this information I have of course been obliged to take it as I find it in old journals, text-books, etc., and I find quite a number of these quotations wrong; and a great many writers on amalgam mislead the dental profession, by going on year after year quoting results taken from these books that are not true.

"About the year 1826, M. Taveau, of Paris, advocated the use of what he called 'silver paste' for permanent fillings. Under this, as it were, shining title was ushered into the world what was destined to be for years the hydra of dentistry." This amalgam consisted of pure silver and mercury, but coin silver being more easily obtained, soon replaced the purified metal. This could not have been so, yet experimenter after experimenter have been misled by making this same mistake. They all say, pure silver expands; now, the facts are pure silver does not harden; this being the fact, how can it expand? A great many who read this will perhaps be astonished to know this fact—I think they will all deny this point; however, I make this broad statement, and stand ready to defend it; understand this fine point, the

silver on the market contains more or less impurities; it is almost impossible to find them free from a small per cent. of copper, and if silver contains a small per cent. of copper it will harden. I have on exhibit here pure silver precipitated into chloride of silver by salt and melted; this is made into foil and amalgamated, it is pure silver and does not harden; another sample is precipitated by copper plate, then washed and dried; you see this does harden just a little, but this does contain a small per cent. of copper, and you will find about all the pure silver on the market does the same. Silver coin is about nine-tenths fine, that is, it contains one-tenth of alloy, which is copper.

The coin was cut down with a file and mixed with mercury, the excess being removed by compression with pliers, the material then being ready for the cavity.

In 1848, Dr. Evens, of Paris, introduced an amalgam alloy consisting of tin and cadmium, which, owing to the shrinkage and discoloration, was soon laid aside. This amalgam of Evans was not made of tin and cadmium; it was pure cadmium, and has been reproduced in this country twice since, once by Dibble and again by the Boston Amalgam Co. Evans, in 1845, found that his fillings not only turned yellow but the whole tooth also turned and was destroyed. When this was introduced by the Boston Amalgam Co., I tried my best to stop its use, knowing that it would cause a great deal of harm.

The Amalgam Co. threatened to sue me for damages; however, it was short lived and the dentists soon found things just as I told them, the fillings and teeth were turned yellow; then they threatened to sue the Amalgam Co., and it went out of business.

Cadmium makes a beautiful alloy; it amalgamates very clean and hardens very quickly, but it is entirely worthless as a filling.

Amalgam was introduced into this country by two French adventurers named Crawcour, who opened an office in New York in 1835. The great pretensions of these ignorant and unskilful men, their charlatan methods, their pecuniary success, and the fact that their "royal mineral" contained mercury, called out the most decided protests and bitter opposition from the leading men of the profession. The attack was prompt and vigorous, and the repeated failures from operations which ignored putrescent pulps and other diseased conditions added the victims of the fraudulent dentistry to the army of opponents. Defeats quickly followed, and these imposters were forced to fly.

Though the Crawcours were driven away, the "amalgam question" was not settled. For many operations and not a few

operators this material had properties and advantages which could not be set aside, and even prominent dentists endorsed and used it in their practice. Individual opposition was in due time followed by the official action of the American Society of Dental Surgeons. In 1841, this society first announced that any material containing mercury was injurious; it next declared (1843) the use of amalgam to be malpractice, and then (1845) it went to the extent of asserting that the refusal to sign a pledge not to use this material was equivalent to malpractice.

As might have been foreseen, the first measure based upon the injurious effects of mercury—a disputed point—did not accomplish its object, while the second measure, attempting as it did to control men's opinions, if not their consciences, could not be enforced even among those who condemned the use of mercurial preparations. In point of fact, these measures were more effective in breaking up the society than in suppressing amalgam. The society retreated from its position by repealing the "protest and pledge" mandate, though strangely claiming at the same time that the resolutions had accomplished their object.

It has often been said that the antagonism sprang wholly from prejudice; but the attitude of its opponents is easily accounted for when the nature and origin of the material is recalled in connection with the character of the men who introduced it to the profession. Again it has been asserted that the opponents to this material were ignorant of its compounds and properties. The facts in the case are, that those who opposed amalgam did so because they knew it was composed of base metals, and because mercury was an essential ingredient, as well as because it discolored the teeth and disfigured the mouth. Not a little has been claimed for the tests and experiments to which the advocates of amalgam subjected this material; yet we look in vain for any evidence that these alleged investigations proved anything or established anything reliable.

For about twenty-five years amalgam was made from coin silver and mercury. Excepting Dr. Evans' objectionable formula, none was given to the profession until 1855, when Dr. Elisha Townsend, of Philadelphia, published his formula for an improved amalgam alloy.

The most conspicuous fact in connection with the use of the silver coin amalgam was that fillings made of it turned almost black and imparted their color to the teeth. Dr. Townsend's alleged improvement consisted in refining out the copper, and making the alloy to consist of five parts of tin and four of silver, and after mixing, washing the mixture with alcohol. This for-

mula was gradually modified until it consisted of six parts of tin and four of silver; and it was then improved by a small addition of gold, and is used to some extent at the present day. As at first made, the color alone was really improved, while the tooth-preserving properties of the alloy were decidedly damaged. But so little was actually known, in spite of alleged investigations, of the properties of this material at this time that, though it was now used more extensively than ever by some of the best men of the profession, about three years elapsed before it was evident that amalgam largely "tinned" and washed had parted with most of its tooth-saving qualities. This view is based on the conclusions of Dr. J. Foster Flagg, who has devoted about twenty-five years to practical work in plastics. He changed and improved Townsend's formula until it consisted of nine parts tin and thirteen parts silver.

So disappointing has this improved amalgam been that a number of prominent dentists obtained from Dr. Townsend a "recantation" in which, for specified reasons, he renounced the use of amalgam entirely. Dr. Flagg, who had taken up the subject of plastics, in particular amalgam, in 1855, and had been using Townsend's improved, regarded the "recantation" with "peculiarly painful professional feelings," which, with much more than could be quoted, would seem to imply that amalgam has depended as much on endorsement and recognition as on its known qualities or genuine merits.

In consequence of the failure of Townsend's amalgam to satisfy the expectations that had been raised, the use of this material was checked for a time, at least among the better class of dentists. From this time (about 1860) until 1874 not much of value was done either to help or hinder the progress of plastics.

In this year, Drs. Hitchcock, Cutler and Bogue published the results of their investigations on amalgam alloys, which gave a new impetus to the amalgam question. At this time (1874) I first came into the field on amalgam, in connection with Dr. Hitchcock's experiments. I made a great many alloys for Hitchcock, and at this time did a great deal of experimenting in alloys on my own account, and by constantly mixing amalgams in my hand, there is no question but that I injured my health, and I wish to say right here that a great many dentists have done the same and they do not know it. There is no question but that it is the cause of a great many dentists having rheumatism.

When your committee wrote me asking me to give a paper at this meeting, I made up my mind to see if mercury would have the same effect on me that it did in 1874, so I went at it, mixing

the alloys in my hand. I tried the Christian Science method, and tried to make up my mind that it was all nonsense, and mercury had no effect on my system, but it was no use, my old trouble came back, and I can assure you, gentlemen, that I am through mixing amalgam in my hand. At the time of writing this I can scarcely walk, as I have rheumatism in my left side, and it is the first time I have had it since 1874-5.

Now, at the time Hitchcock tried his experiments in 1874, the amalgam question was well ventilated in regard to shrinkage and expansion, and I fail to see where Dr. Black or anyone else has brought about any new facts.

Dr. Black says in *Cosmos,* 1896, page 983, that the greatest shrinkage occurs in an alloy, silver 55 and tin 45. I have prepared this alloy, it is marked No. 4, and you can judge for yourself as to its shrinkage. Dr. Black also says on the same page, "I had thirty-four tubes filled with this alloy by as many dentists at the Illinois State Dental Society; the next day I was chagrined at finding about half of the fillings loose in the tubes. Now, if there were half of them loose, and it was the fault of the alloy, why not all? Then, again, on page 983 he says, "If so little mercury is mixed with the mass that it will only make a dark powder that can be made to cohere by strong pressure, the shrinkage will not be quite so great. Still, if so much mercury is mixed with the alloy as to make a very sloppy mass, and this is put in without removing any of it, the shrinkage will be considerably reduced." He also says that these alloys that he has mixed contain about one and one-half ounces, and when melted he stirred them with a rod. Well, if this be true, and I have no reason to disbelieve it, I do not wonder that he received such results.

At the present time, in reading some of the ads. of the amalgam manufacturers, one would think that making amalgam had just been discovered. I fail to see at this late day why a man has got to take a course at college under Dr. Black to be able to make something that has been made for the past forty years or more. Now, Dr. Black may be a good dentist; however, I should say that he had spent a great deal of valuable time on amalgam, and I can't see that he has given us anything but what we knew years ago. It seems to me that the shrinkage business is all nonsense; it is the man behind the plugger that is to blame for leaky fillings. I have prepared quite a number of fillings in little glass bottles that I will pass around, and some of these, according to Dr. Black's test should shrink so that the filling should be loose in the bottles.

No. 1 is plastic alloy; you see it plainly shows if this was in

a tooth there is no question that it would be tight. No. 2 is gold platina alloy; this is the same as No. 1, the liquid has not penetrated in the least. This amalgam was made and on the market in 1874; No. 3 is Flagg's two samples, one marked No. 1 was worked rather dry, that marked 2 rather soft. You will see upon examination, the bottle marked two on the stopper, the filling shows in spots a leakage. I claim this is in faulty packing, and I think you will agree.

The alloys of silver and tin, and other dental alloys, are extremely hard to mix, and it cannot be done by any novice, and the question is this, Is an alloy of silver and tin a chemical or a mechanical mixture?

Pure tin amalgamated does not harden, the same with pure silver; alloy them together half and half and they harden very hard. The hardening process begins at once. Pure silver and pure tin filled up separately and mixed half and half also harden; now, what makes them harden? It would seem that the cause was oxidization of the metals, and yet mercury seems to oxidize pure silver, but why doesn't it harden if the cause is oxidization.

On the bottle marked No. 6, you will find a filling made from gold and platina alloy; compare this with No. 2, it is made from the same bar, filed at the same time. You will see No. 2 is very hard, No. 6 has not hardened. Now, the difference is the No. 6 was oxidized before it was amalgamated, and therefore it does not harden. This seems to be positive proof, yet Dr. Black says, page 969, *Cosmos,* December, 1896, "oxidization has nothing to do with it; it is a chemical agent acting upon the alloy from without.

I took this same alloy, silver 55 and tin 45, marked No. 4, I packed two of these tubes myself, and had quite a number of dentists do the same, and it was surprising to see the results; as Dr. Black says, some of them shrunk and some of them did not, but a large majority did not; in fact, those that were apparently packed the best were the ones that shrunk the most; now, what does this show? simply that everyone works differently.

Give twelve different dentists as many lots of alloy to mix, when they are through it is safe to say you have as many different alloys; that is to say, one man mixes five grains of mercury with his, another six, another seven, etc. Now, what do you get? why, altogether a different alloy, just the same as if you had as many different alloys to start with, and of course different hardness as to the amount of mercury used; the alloy is changed in addition of mercury more or less, just the same as the alloy in the first place of silver and tin. When you can get dentists to

work their alloy all alike, then and not till then will you get uniform results.

One more question and I am through, and that is, Does amalgam fillings injure the health? This is a question that I should like to have looked into by this society. I know that it injures the dentist who mixes it in his hand—I have proof of that; of course it does not serve all alike. It is the same with a great many things; take tobacco, it poisons some while others grow fat upon it; strawberries poison some people. Now, we should not expect everyone to stop eating them because it poisons a few, neither should we expect dentists to leave off amalgam because it is poison to a few; however, I think it poisons more patients than you have any idea of, and it would be well to look into this matter. I know that my wife suffered for twelve years from a large amalgam filling; it was removed and gold substituted and she never had any trouble after; now, is it the mercury or is it the tin, or the combination of both, what poison does it give off into the system? I can't see how it can be the mercury; however, I am positive that it has a bad effect on a great many people. I would not have an amalgam filling in my mouth for any amount of money. I have had all the experience I want in that line; poison ivy will poison me if I go within ten feet of it. Why can it not be possible that a combination of the metals with mercury makes this poison from amalgam fillings? Possibly it will not be out of place to quote from a paper read by a physician before a medical society in New York a few cases he had.

Case No. 1: Miss F., in excellent health previous to an attack of la grippe four years earlier. Numbness of hands and stiffness of jaws led to examination of teeth. Found five amalgam fillings, which he believed had caused mercurial neurosis. She steadily improved on removal of the fillings, and had not been so well in five years.

Case No. 2: Miss E., whose sluggish gait, heaviness of limbs, and stiffness of jaws led to examination of the mouth and the finding of amalgam fillings; gold substituted, and she became animated and has continued to improve, although still suffering from the effects of the absorbed mercury.

Case No. 3: A young lady, restless, sleepless, irritable, hysterical, etc. All her functions normal; had sixteen amalgam fillings; several of the teeth contained gold fillings. The fillings were removed; the young lady improved, all her nervous feelings disappeared, and she manifested none of her nervous troubles after the removal of the fillings.

Case No. 4: Mrs. N., extremely nervous, with neuralgic pains

in the chest and palpitation of the heart. Examined her teeth and found one large amalgam filling in a lower molar. On its removal immediately she felt better. She concludes a letter to the doctor with these words:

"Oh! Doctor, how I wish I had taken your advice last spring and saved myself the sufferings of the summer and fall! I wish I had never had it put in my mouth. No dentist would put in another for any amount of money. I want to thank you with all my heart for insisting upon my having that filling removed, and bringing brightness into my life. I only long to feel entirely well, and trust as the poison passes off that I shall."

Case No. 5: Mrs. H., twenty-six, very excitable, afraid to go out alone in the street and stores lest she become unconscious and be taken to some hospital; stiffness of jaws; left side of head and ear numb; large toe of right foot numb; nine amalgam fillings believed to be the cause of her condition removed, and replaced with gold or "bone;" in one week she improved, and in three weeks hardly believed to be the same woman. Gained twenty pounds in weight after the removal of the amalgam fillings. Nine physicians had previously treated her.

Now, gentlemen, there is no use to laugh at this physician: there is no question but what there is truth in it, and would it not be as well to go a little slower on amalgam. It is being used more and more every day, in fact, if the same amount of gold in proportion was used to-day that was used in 1875 there would not be gold foil manufacturers enough to make it; everything then was gold, now a larger part at present is amalgam and cements.

AMALGAM ALLOYS AND THEIR USES.*

By George Edwin Hunt, M.D., D.D.S., Indianapolis, Ind.

This is a subject from which some wheat and much chaff has been winnowed in the past. The writer who claims that he has any new facts to present in regard to it is either a very wise man or a fool, for only the one would be capable of fulfilling his claim, and a failure to do so would relegate the claimant to the second class. With an inner consciousness that I am not the former, and a trusting faith that the latter designation will not fit, I present a

* Read before the Vermont State Dental Society.

few facts and fancies that were garnered here and there, without any claim to originality in my relation to them.

The tendency of the age is to exactness. There is a fascination in figuring to ten and twenty thousandths of an inch that is difficult to resist. Most of those who talk so glibly of such measurements have little appreciation of the accuracy and delicacy of manipulation necessary to successfully make measurements of such minuteness. The writer seriously doubts whether the micrometers from which the published reports of alloy tests were made are capable of measuring a ten-thousandth part of an inch with exactness, but their work was sufficiently accurate to give very correct notions regarding many things relating to amalgam alloys. Broadly stated, we may sum up the results as follows: First, it is possible to produce an alloy which, when amalgamated and packed in a certain way, will practically neither shrink nor expand. Second, crystallization of the molecules of such an alloy will take place very shortly after the incorporation of the mercury.

In regard to the first statement, let me make the assertion that there is no perfect formula. No one will ever be able to state a formula for an amalgam alloy that will give the desired result in the hands of all makers, whether they are experienced or inexperienced. Of course skilled metallurgists, who are daily employed in studying and working with such alloys, will come nearer getting uniform results from a given formula than those not so employed, but the personal equation is certain to enter into the problem sufficiently to make my assertion a truth. The manner and method of smelting, the precautions taken against oxidation, the length of time the smelt is roasted, the temperature at which and the manner in which it is poured, the condition of the moulds, the after treatment of the ingot, and finally, the annealing of the cut product, all matters absolutely under the control of the operator, have each a bearing on the final result. What will prove to be a formula resulting in the least change in the hands of one maker may, under slightly different manipulation by another man, prove a failure, while maker No. 2 may get results with another formula that maker No. 1 is unable to duplicate. This may sound like a splitting of hairs, but it is a fact—and splitting hairs is necessary to satisfy the extremists of to-day. So I will not attempt any comment on formulæ at all, nor will I enter the broad domain of methods in alloy making. These subjects are better left to the conscientious metallurgist who is qualified by education to cope with them. The dentist is no more fitted by training and experience to make alloys than he is to make

gold foil or zinc phosphate cement. The technique of these latter operations is as accessible as that of the former, but only the skill and experience that comes from knowledge and constant practice can bring about the desired results in the manufacture of any of the three. A matter of more moment to the practitioner is the choice of an alloy and its manipulation.

The amalgam alloys offered for the use of the profession to-day may be roughly divided into quick setting, medium setting and slow setting. The time required for crystallization may be modified to some extent by the manufacturer, but it is not entirely within his control. The formula used very largely governs the rapidity with which the alloy sets. It is claimed for the quick-setting alloys, and very justly, that they show less shrinkage, greater resistance to a crushing force, and less " flow," or change of form, under pressure insufficient to crush the mass. The objection to their use is that they set very rapidly, and in the hands of many this objection is almost an insuperable one. The medium-setting alloys will shrink some, but they give time for care in making the filling, and enable the operator to work with greater deliberation. The slow-setting alloys, those which take from one to five hours to set, shrink even more, and are gradually passing out of use.

The question of the point at which an amalgam crushes, is of little interest to me. I never saw an amalgam filling crushed in mastication, and I never heard of such a catastrophe. The amount of flow or lateral movement under repeated impacts *is* of interest. It is almost certain that very slow-setting alloys are sufficiently soft to creep or flow under impacts. This tendency is largely due to the amount of tin they contain. A medium-setting alloy can be made that will contain enough silver to minimize this flow so that it is of little moment. The amount of flow under a steady pressure is of no importance unless it is proven that there is a relation between the figures so obtained and those obtained by measuring the flow produced by repeated impacts. The pictures printed by various manufacturers of our alloy, showing a cube with sharp edges and corners, and the " other fellow's alloy " flattened and with rounded edges, each after having been submitted to a test for flow by being subjected to a certain number of pounds of weight for a certain length of time are interesting, no doubt, but they are of absolutely no practical value to anyone. Besides, those half tones are made from drawings.

Engineers know that even chilled steel will flow if sufficient weight is put upon it for a sufficient length of time. Movement of the molecules of any metal will take place under the proper

combination of sufficient time and weight. But no amalgam filling in the mouth is ever subjected to a continuous weight of two hundred, or fifty, or even five pounds. The flow there must be brought about by repeated impacts, if at all.

So the choice of an alloy rests between the quick-setting ones which have a minimum amount of shrinkage, or perhaps some expansion, and a medium setting one which has a little more shrinkage and sets slower.

Which shall we use? In my opinion, each operator will have to decide that question for himself. It all depends on the man. I have seen many fillings made by good operators from quick-setting alloys that were very poor fillings. I have seen fillings made from quick-setting alloys that would permit of a large party of microbes dancing quadrilles between the dentine and the porous material that had begun to crystallize before the operator placed it in proper position. I have seen fillings made from quick-setting alloys that I am sure will not preserve the teeth as well as if they had been made with a slow-setting alloy, even if it did shrink a little. But this does not prove that the quick-setting alloys are bad. It only proves that a great deal depends on the man who makes the filling. Many operators will never make successful fillings with the quick-setting alloys. When an amalgam begins to crystallize, disturbance of its molecular arrangement must be attended with disaster. The operator who is unaccustomed to this class of filling material will endeavor to use it when crystallization has begun, will note the friability of it, and will discard it with the complaint that it has "poor edge strength," when the fault all lay in his manipulation. These are not fancies, they are facts. The manipulation of quick-setting alloys must be studied and mastered before they can be used with success. No operator can change from years of use of cohesive foil and make successful fillings at once with soft gold. Many operators *never* learn to make good fillings with soft foil or tin. And so it will be with quick-setting alloys.

The medium-setting alloys *have* saved teeth in the past. The record of several decades of clinical experience proves that teeth can be and have been preserved by their use. Investigation by means of the micrometer has proven that they shrink, some more and some less. Clinical experience proves that they save teeth. They may do it in spite of their badness instead of on account of their goodness, but they save teeth. You may be sure that a filling well made with a medium-setting alloy will give better clinical results than a filling badly made with a quick-setting alloy. Much depends on the operator. An alloy is often con-

demned when the fault was in the preparation of the cavity and the insertion of the filling. When the gold filling of these same operators fail, they attribute it to "poor tooth-structure."

In my opinion, every alloy filling would be a better filling by being malleted to place. If it is not malleted, every piece of amalgam should be condensed with a pressure of from seven to ten pounds. The next time you go to the butcher's to buy a steak take your lead pencil and, holding it as you would a plugger, make pressure on the spring balance scale on which your meat is weighed, and see what ten pounds of pressure means. If you are not condensing your amalgam fillings with that amount of pressure you are not making them as near perfect as you can. And, if you will put a small pledget of bibulous paper over each piece of amalgam as you place it in the cavity, and mallet the mass thoroughly, you will be making a still better filling. The bibulous paper serves the two-fold purpose of preventing any chopping up of the amalgam and of taking up any free mercury that the malleting may bring to the surface. When a piece of the mix is placed in the cavity it should be carried straight before the plugger point until thoroughly condensed. For this work, broad, flat, shallowly-serrated points are best adapted. The round ball burnishers so frequently used in working amalgams are not well fitted for the purpose.

If a medium-setting alloy is used, all excess mercury should be wrung out and the amalgam used as dry as it is possible to get it. This is best accomplished by using a piece of drilling or fine meshed linen. The mix is placed in the middle of the piece and the ends tightly twisted. It is good finger exercise if you get the mass as dry as you should. With the quick-setting alloys, such a procedure is impracticable. The time spent in wringing out the alloy and the greater rapidity of crystallization imparted to it by the small amount of mercury left in it, are almost certain to cause it to partially set before it is used.

If the following rules for making an amalgam filling are carried out the result will more often correspond with the desires of the operator:

First. Prepare the cavity just as you would for a gold filling, except that bevelling the margins is advisable. The same care devoted to the preparation of the cavity that is given to one designed to receive gold will alone vastly increase the percentage of successful fillings.

Second. Never put an amalgam filling in an occluso-proximal cavity without a matrix. The best amalgam filling can only be inserted when the cavity has four walls against which to pack the

material. If one of the tooth walls is broken down, its place must be taken by a matrix if the desired results are to be obtained.

Third. Use enough mercury to make a homogeneous mass that does not readily crumble under the finger. If the alloy is a medium-setting one, wring the mix out strongly, leaving it as dry as possible. If a quick-setting one, leave enough mercury in the mix to enable you to fill the cavity before perceptible crystallization occurs. This amount can only be determined by experience.

Fourth. Place small pieces at a time in the cavity, condensing each piece before adding another. Good amalgam fillings cannot be made by "wiping" the alloy into the cavity in one large mass. Condense with broad, flat-faced, shallowly-serrated pluggers by placing the point either directly on the alloy or on bibulous paper covering the alloy, and carrying that portion of the mix directly before the plugger point until it is condensed. The plugger is then placed on another part of the mass and the performance repeated. Chopping up the alloy by repeated jabs at it, as in condensing gold, is harmful. Heavy pressure with hand instruments, or, preferably, malleting, will give the best results.

Fifth. Finish every filling with the same care that is bestowed on gold fillings. No matter how well the cavity is prepared or how well the filling is inserted, a bad finish at the cervical margin will cause it to fail in a short time.

Sixth. Charge more for your amalgam fillings. Your patient will appreciate them more highly and you will make them better.

"The better the pay, the better the deed."

PORCELAIN INLAY.*

By H. Burbridge, D.D.S., Woodstock, Vt.

Up to the present time, nothing has ever been introduced to the profession for the stopping or filling of cavities in the natural teeth caused by decay that in any sense of the word produces an artistic result.

The choice so far being gold, the excellent qualities of which cannot be denied. But from an æsthetic point of view it is sadly at fault.

*Read before the Vermont State Dental Society, St. Johnsbury, Vt., March 22nd, 1900.

How often do we hear our patients say, "Will the gold show?" Now, if our work was of the highest type of art, and the material did show, there would be no need of this question, as it would not show, for being the highest type of art it would conceal itself. Therefore, with the advent of porcelain in such forms that it can be handled by almost any dentist who will take the pains to master the fundamental principles, this main objection has been removed.

In endeavoring to give you as briefly as possible an outline of the work as I have been able to acquire it from time to time, those of you who take it up will bear in mind that you will suffer a great many disappointments and failures, especially in the beginning; but your successes will always outweigh them, as your patients will be very grateful to you for what you accomplish for them when you obtain a good result.

As is not generally known, the making and inserting of a porcelain inlay consists of the following steps:

1. The preparation of the cavity.
2. The adaptation of the platinum or gold form in which the porcelain is baked or melted.
3. The investing of the gold or platinum form; the packing and melting of the powder or paste.
4. Finally, the removal of the form from the finished inlay and the cementing in place of the same.

Let us, therefore, consider the proper manipulation of the various steps, as before mentioned. For the simplest form, let us conceive a cavity oblong in shape, with flaring walls and the floor perfectly smooth, with no retentive points. Especial care should be given the margin of the cavity. It must be as clearly cut and perfect as is possible for human agency to make it, or the work will be a total failure. This may be accomplished by the aid of small stones, diamond points or finishing burrs.

The next step is the making of the platinum or gold form. This is conceded as the most difficult part of the whole operation, as on this fitting accurately depends the success of the finished piece of porcelain.

In accomplishing this I prefer rolled gold, No. 30, it being softer and more pliable than platinum. I take a piece larger than the orifice of the cavity, then, with a round smooth burnisher, gently rub the gold upon a piece of soft, smooth and clean cork, depressing it in the centre to the approximate size of the cavity to prevent tearing the gold in carrying it to the bottom of the cavity. After which I anneal and place it in the cavity and pack it tightly with small balls of cotton or spunk, repeatedly burnishing the

edges and annealing as often as required. Being satisfied that the form fits accurately, I take a small piece of white wax which is slightly warmed, and press it into the cavity with a flat burnisher. If it is an approximal cavity, involving labial and lingual walls where the burnisher will not do, I select an ordinary polishing strip (one of the finest, wide enough to entirely cover the cavity), putting the smooth linen side next to the wax, and I pull the wax into the cavity, using care in not drawing the tape in one direction or the other, but with a steady pressure forcing the wax into all parts of the form and avoiding a surplus of wax beyond the margin. The form can now be removed with very little danger of getting it out of shape.

After this I imbed the form in an investing material which will stand the heat and can be dried quickly without cracking. Then I warm the investment over a spirit lamp, and as soon as the wax warms a little I take it out, not allowing it to melt. Next I wash out the form with alcohol in order to remove all traces of the wax; then, as a further assurance of this result, I place the investment in the furnace and bring it to a red heat.

After cooling, it is ready for packing with the porcelain paste. Care must be taken in packing the paste so that it will not shrink away from the margins. I generally make at least three bakings, sometimes more, according to the case. Having selected the proper color or colors necessary, I mix the powder either with gum water or distilled water (preferably the gum water, as you can then carve it up better to shape if necessary) to the consistency of thick cream, with which I cover the bottom of the matrix letting it run up nearly to the margin. Then I tap with an instrument to bring the water to the surface and absorb with a piece of clean linen, continuing to tap until the paste is closely packed down and all the surplus water absorbed. Now, with a small camel's-hair brush, remove the centre of the paste, leaving just a ring around the margin, for if this is not done it will shrink toward the largest mass of its own body which is the centre, but this centre has been removed, therefore it shrinks toward the circumference.

Then place it at the mouth of the furnace and turn on the current, passing the investment in as it heats up until it is carried to the back of the furnace. The first baking should be thorough, as this will not move in subsequent heatings unless carried to an extreme. The next packing should fill the matrix even full. Proceed as before, tapping and absorbing the water with linen. At this stage of the manipulation care should be taken to remove all particles of paste that overhang the margin of the matrix.

If this be not done, the margins will be ragged, and there will be small bubbles, as a perfect margin is the most essential feature of a porcelain inlay.

After the second baking, there may or may not be a shrinkage, according to the fineness of the powder or care in the packing of it. If there should be any shrinkage, add sufficient to supply the deficiency wherever it may be, and bake again. This can be repeated any number of times, according to the requirements of the case at hand. After the last baking, it is better to leave the inlay in the furnace to cool, as sudden changes of temperature may cause fracture of the finished piece.

When cool enough to handle, the gold may be stripped off, commencing at the margin all around with a pair of pliers to prevent marring the edges, and when once it is free of the margin it can be pulled away without danger.

The walls of the inlay should have fine grooves cut in them to assist in the retention. (If possible, these should not be opposite to one another, as in small inlays they would tend to weaken it.) This can be done by fine diamond disks, which are kept wet when cutting.

It is obvious that the cementing of the inlay is a very important matter, as it will affect the color by many shades, generally rendering it darker.

Any four-color high grade cement that will mix thin without deteriorating in strength will answer. Grey and white are the colors that will match the majority of cases. Mix the cement somewhat thinner than for filling (few trials will be sufficient by way of experiment).

The cement should be thoroughly smeared over the walls of the cavity and inlay. Carry the inlay to place with small wedges or points of orange wood. Pressure should be maintained if possible until the cement has nearly hardened. I find it better to wait until a subsequent sitting to remove a surplus of cement, also to examine and complete the operation. A few considerations in regard to details would not be out of place.

The inlay will go to place better if a double thickness of gold is placed in the bottom of the cavity.

Never bevel the margin of the cavity to any extent, as it will be very liable to fracture, being thin, if much pressure is applied when cementing to place.

In all approximal cavities it is better to choose a lighter shade than the tooth itself, as the inlay is not translucent like the tooth itself but is opaque, making it look darker.

Now, in regard to cements obtainable at the present day. In

order to get the best results from them, it is necessary to incorporate as much of the powder with the liquid as possible. Now, this cannot be done in the setting of an inlay. As I said before, the cement must be mixed somewhat thinner than for filling; we necessarily deprive it of an important part of constituency. Again, it is my firm belief that what is required is a cement that is clear in color. For no matter how perfect the color of the inlay, any cement with a semblance of color will act as a cloud coming between the tooth and inlay, thereby increasing the opaqueness. And it will not be until we can produce an inlay having the same translucency as the tooth itself that we shall attain the highest type of the art.

A CHRONIC CASE OF EMPYEMA OF THE ANTRUM.

By S. D. Hodge, D.D.S., Burlington, Vt.

In regard to this case, which is that of a prominent clergyman, aged 56, of Burlington, Vt., I would like to say in the beginning, that while I have been connected with the case from the first surgical treatment of the antrum, the general direction of it has been under the care of Dr. Chretian Zaugg of Montreal, and the specialist of the Fanny Allen Hospital of Burlington. The antrum affected is on the right side,

There is one point in the etiology of diseases of the antrum on which there is unanimity of opinion; it is not an idiopathic affection. Most of the dental text-books give dental caries, periostitis, injury and abscess of the roots of the teeth as the cause. I think that most dental practitioners are of the opinion that nearly every case can be traced to these sources. On the other hand, most rhinologists of to-day, while giving diseases of the teeth as the cause of the majority of cases of antral trouble, are of the opinion that a good percentage of cases are of nasal origin.

Of the physiological function of the antrum, and the accessory frontal, ethmoid and sphenoidal sinuses little is absolutely known. A more careful and systematic study of the physiology and pathology of these sinuses, will, as in all other branches of medicine, clear up disputed points. The pathological phenomena of antral diseases do not differ from those that attend purulent processes of mucous membranes elsewhere.

So far as I know, every one who has been connected with this case is of the opinion that the cause of the antral trouble was chronic nasal catarrh of many years' standing, and that there was empyema of the antrum for a long time before it was suspected that it was involved. It is not necessary to go into the minute anatomy of the antral cavity. You will readily recall the fact that it is only one of a series of accessory cavities and that the orifices by which the frontal, anterior ethmoid and antral cavities communicate with the nasal chambers are close together, and that pus or a purulent discharge from one of these sinuses might easily find its way into the antrum, infecting that.

Empyema of the antrum is usually preceded by a catarrhal inflammation, and with the access of micro-organisms assumes a purulent character. In this case there was a general impairment of the vitality of the patient. There was very marked anemia; lips, ears, eyelids were bloodless. You could almost look through the hands, and the liver and kidneys were inactive. This condition of active toxemia was very marked for two years before trouble with the antrum was discovered, and so grave was the condition of the patient at the time of the opening into the antrum that there was great anxiety lest general systemic infection should follow the operation.

About two years before trouble with the antrum was discovered, the right superior bicuspid tooth had been crowned with a Logan crown. It was an excellent piece of work in every respect, and had done good service for something like eight years when the post of the crown broke. I drilled out the broken post and put on a new Logan crown. This was worn with entire comfort for something over a year, when the root split. The patient was at this time ill at the Fanny Allen Hospital, and as the root began to abscess, it was taken out at the Hospital. The root was taken out Christmas day, 1896. This healed without any trouble.

For many years the patient had been troubled with severe headaches, the pain being in the frontal region. The usual symptoms of antral trouble were absent, and the teeth and gums were in a healthy condition, no alveolar enlargement. About August of 1897 there was a sense of distention and weight in the upper jaw. He went to Montreal and placed himself under the care of Dr. Chretian Zaugg. August 10, 1897, Dr. J. H. Bourdon of Montreal extracted the right superior first molar, and Dr. Zaugg opened into the antrum, following the socket of the palatine root of the first molar. Cocaine was used in this operation, the patient not desiring to take an anesthetic. The condition of the patient was such that it was thought best to pursue a conser-

vative line of treatment, and not attempt any radical operation; making simply an opening for drainage, using antiseptic washes, and building up the system, believing that with increasing vitality both the antral and nasal trouble would be brought under control.

Upon opening into the antrum a large amount of pus was found. This was washed out with a saturated solution of boric acid.

About a week after the operation the patient, accompanied by Dr. Zaugg, came to my office, and a plate was made to hold drainage tube in position. This drainage tube was silver; it was worn till November 23, when Dr. Bourdon of Montreal made another plate, using a different shaped tube. This plate was clasped to the second molar and first bicuspid. In October, 1897, an operation was performed by Dr. Zaugg, removing hypertrophied tissue from the middle turbinal, left side. This was removed by cautery.

In April, 1898, Dr. Zaugg removed a large mass of hypertrophied tissue from inferior turbinal, right side, using the cautery in this operation. Much relief was given by these two operations.

There had been a gradual improvement in the condition of the patient from the time of the first operation of opening into the antrum in August, 1897, till the summer of 1898. He then began to be troubled with violent headaches, the pain being most severe in the frontal region, and the general condition began to grow worse. He sent for Dr. Zaugg, who came to see him Aug. 29, 1898. The patient was suffering intense pain and had a high fever. Examination showed the membrane covering the middle turbinal, right side, greatly congested, and so great was the congestion of the tissues that the passage was nearly closed, nearly filling the space between the middle and inferior turbinated bones. This was immediately relieved by the application of a four per cent. solution of cocaine. The nasal condition was so severe as to give rise to a painful attack of tri-facial neuralgia. Heroic doses of quinine and codein were given for six days. The congestion and pain were relieved, and the following week he went to Montreal, and Dr. Zaugg cut away the hypertrophied tissue from middle turbinal, right side. This was cut away by snareing.

It was thought best at this time to take out the first bicuspid tooth. This was done by Dr. Bourdon, who made a new plate, and a new drainage tube of gold was used. There has been a marked improvement in every respect since these operations. The general health has improved, no further headaches, and the discharge from both the antrum and nasal passages less

in quantity and less purulent. A little later another plate was made by myself, using the same drainage tube; this is the one he is now wearing. It is clasped to the second molar and the cuspid. Many different solutions have been used to wash out the antrum. After the first operation boric acid, saturated solution, alone was used; Peroxide of hydrogen ten per cent. was used for some time; carbolic acid solution two per cent.; Resorcin one, two and three per cent.; Marchand's hydrozone fifty per cent., followed by glycozone; Glyco-Thymoline twenty per cent.; Tr. calendula two per cent.

From the time of the first operation in August, 1897, until September, 1899, the washing out of the cavity had been done principally by the patient himself two or three times daily, the syringing being done through the drainage tube, and every week coming to my office to have the plate and drainage tube thoroughly cleansed. In September, 1899, at the suggestion of the specialist of the Fanny Allen Hospital, we commenced the use of protargol, taking out the drainage tube every day and thoroughly irrigating the antrum through the opening in the alveolar process. The protargol was at first used one-half of one per cent. solution, but later about one-fifth of one per cent. The protargol was followed by a mild solution of Wampole's Formalid. This gave the most beneficial results of anything yet used. I know of no remedy equal to protargol for the washing of a diseased antrum. The protargol was used for about four weeks daily, and since that time has been used occasionally, when there is much catarrhal discharge. We are now washing out the antrum, removing the drainage tube four or five times a week, using a mild solution of Wampole's Formalid. The patient washes it out daily through the drainage tube, using a solution of boric acid or chloride of sodium. Numerous bacteriological examinations of the discharges from both the antrum and nasal passages have been made. Streptococci and staphylococci and pus cells have been found in every examination. The most interesting microscopal examination was one made at the Vermont State Laboratory of Hygiene, Feb. 4, 1899, which is as follows:

Growth reddens litmus.
Ferments Smith solution.
Grows with gas production in gelatine stab.
Gives indol reaction with Dunham's solution.
Bacterium is B. coli communis.
Pathogenic for guinea-pig in nine days.
I think that this bacillus has not been found since.

The condition of the patient to-day is that of returning health and vigor. In washing out the antrum, the water as it comes away is usually clear, showing but little discharge from the antrum. There is considerable discharge from the nasal passages. The last microscopical examination made a few weeks ago showed the same bacilli in both antrum and nasal passages.

Trans-illumination of the antrum shows slight hypertrophy in one or two places. No trace of caries of the bone can be found.

It is my opinion that if the nasal passages were in a normal condition, it would be safe to take out the drainage tube and close up the antrum.

I am indebted to Dr. H. E. Lewis, the eye, ear, nose and throat specialist of the Fanny Allen Hospital, for the data of the surgical operations and the microscopical examinations.

PAINLESS EXTRACTING WITH CHLORETONE.

By H. A. Foster, D.D.S., Omaha, Nebraska.

I have had an experience in painless extraction which may be of interest to other dental operators, and which I therefore submit for perusal and consideration.

I was called upon in February last by a man who requested me to extract eighteen teeth for him. I asked Dr. R. M. Stone, who has frequently employed the Schleich method for me, if he would give the man the injections of the Schleich Solution. A single glance seemed to satisfy Dr. Stone that it would not be advisable to do so, since the patient was somewhat cyanotic—his nails and lips being blue.

We thereupon proposed to use Chloretone, which had been brought to our notice a few days before, and highly recommended as an efficient local anesthetic. I injected a few drops of a saturated solution of Chloretone around the roots of the teeth designated, eighteen in all, and proceeded to extract them.

The patient sat quietly in the chair during the entire time, opening his mouth to receive the forceps, as requested, and said, after all the teeth were out, that he had suffered no pain worthy of mention during the whole procedure.

On a subsequent occasion, only a few days ago, I removed twelve teeth in the same manner without a murmur of dissent or evidence of pain on the part of my patient. I am delighted with the action of Chloretone, and I shall use it in all future extracting.

Proceedings of Dental Societies

VERMONT STATE DENTAL SOCIETY.

The Twenty-fourth Annual Meeting of the Vermont State Dental Society opened at the Avenue House, St. Johnsbury, Vt., March 21st, 1900, at 7.30 p.m. The meeting was called to order by the President, Dr. K. L. Cleaves. Prayer was offered by Rev. J. H. Hoffman.

Minutes of the last meeting read and accepted, and ordered to be placed on record.

Report of the Treasurer read and accepted. It showed an indebtedness of $61.92, and on motion of Dr. Munsell the members were assessed $1.00, with the annual dues of $1.00, making $2.00 each.

The Secretary was instructed to cast a ballot for the following new members: Dr. Harlin Carpenter, South Royalton; Dr. Edward N. Trenholme, Island Pond; Dr. Fred. H. Brown, Enosburg Falls; Dr. J. Churchill Hindes, Vergennes; Dr. Thomas J. Walsh, St. Johnsbury; Dr. H. A. Allen, Randolph Centre; Dr. G. H. Newland, Newport; Dr. J. F. Wheelock, Waterbury; Dr. R. C. Linsley, Bristol; Dr. W. F. Mann, Barre; Dr. G. E. Hunt, Montpelier; Dr. Richard H. Kinkead, Brattleboro.

The report of the Executive Committee, read by Dr. Pearsons, was accepted.

State Prosecutor's report showed that he had prosecuted one dentist for violating the Vermont law.

It was brought to the attention of the Society that a member, Dr. A. J. Parker, formerly of Bellows Falls, but now of Chicago, was conducting himself unprofessionally, and on motion of Dr. Chase, a committee of three, composed of Drs. Chase, Cheney, and Hoffman, was appointed by the chair to investigate the

matter, and the committee recommended, and it was so voted, that the Secretary of this Society be instructed to notify the Secretary of the Chicago Dental Society that charges have been preferred in this Society against Dr. Parker, and are to be acted upon at the next meeting.

On motion of Dr. Steele, a vote of thanks was extended to Rev. J. H. Hoffman, and he and his family invited to be present at the social evening, Thursday.

Dr. Hodge moved that this Society request the Surgeon-General of the United States Army to appoint Dr. William S. Donnally, of Washington, D. C., to one of the three appointive positions under the act of Congress appointing Dental Surgeons for the United States Army.

The address of welcome was delivered by Dr. R. W. Warner, of St. Johnsbury. President's address by Dr. K. L. Cleaves, of Montpelier.

The remainder of the evening was devoted to the paper by Dr. H. A. Baker, of Boston: "A New Method of Treating Receding and Protruding Jaws," which was illustrated by charts and models. This was a very interesting paper, and was followed by discussion, after which the meeting adjourned until Thursday a.m.

On reassembling Thursday a.m., Dr. Cleaves read letters from Dr. J. Foster Flagg and Dr. J. E. Taggart, and Dr. Cheney also read letters from Dr. W. Geo. Beers and Dr. G. Lennox Curtis, also Dr. G. O. Webster, of Germany.

Dr. R. M. Chase then read his paper, entitled, "Gold Fillings Made out of the Mouth." Specimens of the work were passed around for inspection, followed by a general discussion.

Papers by Mr. John Hood, of Boston, on "Amalgam," and Dr. Geo. E. Hunt, Indianapolis, Ind., on "Amalgams and their Use," were discussed together.

On motion of Dr. Robinson, it was voted to give the papers to Dr. Beers for publication in the DOMINION DENTAL JOURNAL, and Dr. Beers requested to then send the proofs to the *Digest* and *Brief*. The meeting then adjourned.

CLINICS.

Thursday afternoon the following clinics were given:

Dr. R. M. Chase, "Making Gold Fillings out of the Mouth"; Dr. H. Burbridge, "Porcelain Inlay"; Dr. J. A. Robinson, "Articulators and Articulations."

The meeting was then called to order, and Dr. Burbridge read a paper on "Porcelain Inlays," followed by Dr. Robinson's paper on "Articulators and Articulations." Dr. Robinson exhibited a number of cases in different makes of articulators, which was very interesting. Both papers were followed by discussions.

On motion of Dr. Hoffman, a committee of three was appointed by the chair to recommend an Examining Board to the next Governor for appointment; the committee was composed of Drs. Hoffman, Turrill and Pearsons, and reported the following: Your committee would recommend that the chair appoint a committee of three to secure if possible a change in Section I., Statutes of Vermont, relating to the appointment of the State Examining Board, and that instead of serving two years as at present that they be appointed by the Governor for the terms of five, four, three, two, and one years, and that hereafter the Governor shall annually appoint one man for the term of five years.

The President appointed Drs. Hoffman, Hodge and Blanchard to look after the above at the sitting of the next Legislature. The meeting then adjourned.

Mrs. Cheney gave a reception to the ladies Thursday afternoon, at 4.30, which was a very enjoyable occasion, the entire evening being devoted to social enjoyment.

On Friday morning, at nine o'clock, the meeting was called to order by the President, Dr. Cleaves. The following officers were elected for the ensuing year: President, Dr. H. Turrill, Rutland; 1st Vice-President, Dr. C. W. Steele, Barre; 2nd Vice-President, Dr. J. A. Pearsons, Barton; Recording Secretary, Dr. T. Mound, Rutland; Corresponding Secretary, Dr. Grace L. Bosworth, Rutland; Treasurer, Dr. W. H. Munsell, Wells River; State Prosecutor, Dr. G. W. Hoffman, White River Junction; Executive Committee, Dr. J. H. Jackson, Burlington; Dr. H. Burbridge, Woodstock; Dr. R. H. Newton, Montpelier.

It was unanimously voted to remit all past and future dues of the Corresponding Secretary.

Dr. E. O. Blanchard was chosen a delegate to the International Dental Meeting, to be held at Paris.

Delegates to the National Dental Association: Drs. G. W. Hoffman, K. L. Cleaves, E. E. McGovern, S. D. Hodge, J. H. Jackson, G. F. Cheney, R. M. Chase.

Paper by Dr. Hodge, on "Empyema of the Antrum," was read and discussed at some length.

After Dr. Warner's paper on the "Use of Certain Remedies in Dental Practice," a motion was made and seconded that we adjourn.

Adjourned, to meet in Montpelier the third Wednesday in March, 1901.

THOMAS MOUND,
Recording Secretary.

BOARD OF EXAMINERS DENTAL ASSOCIATION, PROVINCE OF QUEBEC.

At the Dental Examinations of April 4th and 5th, 1900, the following candidates were successful: *Final, D.D.S.* (five out of seven), J. B. Morison, F. E. Skinner, F. W. McKenna, W. Watson, and E. H. A. Stevenson. *Final, L.D.S.* (three out of seven), Alex. Lemieux, T. J. Porter, and H. J. J. Ladonceur. *For Matriculation* (three out of eight), F. J. Garraty, Henri Verret, J. N. Faulkner.

Dr. Jos. Nolin (President) resigned, and was replaced by Dr. J. H. Bourdon. Dr. Stevenson was elected President and Dr. Bourdon Vice-President.

EUDORE DUBEAU, L.D.S., D.D.S.,
Secretary.

Dominion Dental Journal

EDITOR:

W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.
107 METCALF STREET

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VOL. XII. TORONTO, MAY, 1900. No. 5

OBTAINING DEGREES BY ACT OF PARLIAMENT.

Messrs. C. D. Pinel, of Bowmanville, and Fisher, of Chatham, are applying to the Legislature of Ontario for special Acts authorizing them to practice dentistry in the province. It is time such methods of obtaining the coveted license were put a stop to. Our excellently equipped college can turn out the "finished article" as rapidly as, in all conscience, the needs of the province demand. These men have not in any way complied with the requirements of our Dental Act, but, on the contrary, have been violators of the law for years. If every licentiate in Ontario would comply with the suggestion of the Board, and address an explanatory letter to his representative in the Legislature, there would be little danger of these gentlemen being successful.

M. M.

GOOD NEWS.

JUST as we go to press, we learn with great pleasure that, though the Lower House in Quebec granted undesirable amendments to the Act of Incorporation, the whole thing was rejected by the Council, and the law remains in *status quo*. The abolition of the Upper House in the Province of Quebec would be an immense boon to those impecunious members of the Lower House, who are strongly suspected of a ravenous desire to serve their own financial interests rather than the interests of the country. The profession has reason to be grateful to the Council.

Editorial Notes.

The April *Items of Interest* devotes considerable space to an exposure of a most deplorable state of affairs said to exist in California, where a member of the State Dental Board is accused of making use of his position to squeeze money from unfortunate candidates. Members of the profession in Ontario who expend their surplus energy in berating the way dental affairs are managed at Toronto, should read this. We would commend to our California and United States friends generally a Board formed after the plan of the Board of the Royal College of Dental Surgeons of Ontario, as the incorporated profession is called. Every second year a Board of seven is elected—one from each of seven electoral districts, the members of the profession sending in their ballot-papers by registered letter. In this way, no Governor or ordinary politician of any kind; in fact, no one outside the dental profession, has any say in the election of the governing body. Our friends south of the International line might find several little things like this in Canada worthy their imitation, if only they would forget for the nonce that they are "the greatest people on earth."

M. M.

DURING a recent visit to our collaborateur, Dr. Carl Klotz, of St. Catharines, Ont., we enjoyed a perfect feast in the way of witnessing his splendid success in the treatment of difficult cases of irregularity. The Doctor is a born mechanic, and has contrived more ingenious improvements on the things he buys, as well as more original facilities for work than any other dentist we have met in Canada. He and Dr. Beacock, of Brockville, would make an harmonious team. Especially in the practical application of all the

most scientific, expert methods of treating irregularities of the teeth, as well as in a multitude of original designs. Dr. Klotz has his heart as well as his head in the matter, and without his knowledge or consent, we venture to suggest, that the many juniors who fear to tackle difficult cases, or whose experience is limited, would be greatly benefited by his practical skill. There is no reason why experts in this direction should not make a specialty of consultation, or even practical assistance, with those who are either bewildered before difficult cases, or who continue to use obsolete methods. Dr. Klotz has made Orthodontia a particular labor of love, and has the gift of imparting valuable ideas which cannot be learned from theorists or from books.

In the February issue of the Journal, Dr. McInnis, President of the Manitoba Association, complained of not having received a copy of the amended Territorial law, which provides for reciprocity between the Provinces. Clause c, sec. 6, of the ordinance as it was published in the same issue has been amended so as to read: "Any person possessing a license to practice dental surgery issued by any of the provinces of the Dominion of Canada exercising similar powers as conferred by this Ordinance, and in which the standing for qualification is equal to that of the Territories; 'Provided that the province issuing said license recognize the license granted by the North-West Territories.'" The other amendments provide for a registration fee of fifty dollars; a matriculating standard equal to the second-class certificate, and that all foreign colleges must require a preceptorship of not less than two and a half years before their Diploma can be registered.

Dr. Jas. O'Connor (2237 St. Catherine St., Montreal), is selling his investing compound, "Adamantine," direct from his own office. For all metal work, for taking impressions and various other purposes, it is just the thing. Metal can be poured into impressions, doing away with the old method of moulding. The Doctor supplies the compound at the reduced rates, in bulk, 5 lbs. or over, at 25 cts. per pound.

The Board of the Royal College of Dental Surgeons of Ontario has forwarded one hundred dollars to the National Patriotic Fund. In sending the cheque, Dr. Willmott made mention of the interest felt by the profession in the men at the front, a graduate and two undergraduates of the College being among the "Soldiers of the Queen." M. M.

ACCORDING to the *Vienna Klin. Rundschau*, Russia has decided to restrict the over-production of doctors by limiting the number of students received for the freshmen year, at various medical colleges, to a number ranging from 100 at Warsaw and Kasan, to 200 at Kieff and 250 at Moscow and St. Petersburg. —*Journal A. M. A.*

Obituary

DR. ALONZO BURNS.

In the death of Alonzo Burns, of St. Thomas, Ont., on Feb. 26th, 1900, the profession loses one of the few remaining operators starting back in a past decade. Was a student of the late Dr. W. W. White, in Chatham, Ont., in about the year 1857, afterwards locating in Napanee, Bath and Niagara, finally settled in St. Thomas in 1859, where he soon secured a large practice. Associated with him for a time was his younger brother, T. H. Burns, now living in South Hampton. Dr. Burns was in his sixty-fourth year, had been active in both church and municipal local affairs, and died highly respected by all who knew him.

FIRST MEETING OF

Dental Society of Western Canada

WILL BE HELD

On Friday and Saturday

July 20 and 21, 1900

In Winnipeg

All the Members of the Profession between the Great Lakes and the Rockies are invited to be present and to become Members.

Good programme promised. REDUCED RATES expected on all railways. Good Reception Committee.

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CHAIRMAN.
WINNIPEG.

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