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Original Communications

MAKING GOLD FILLINGS OUT OF THE MOUTH BY THE IMPRESSION AND MATRIX SYSTEM.*

BY R. M. CHASE, M.D., D.D.S., BETHEL, VERMONT.

The making of gold fillings out of the mouth would at first thought, perhaps, seem a little strange, yet in this case as in all others a title has no significance unless possessing merit and capable of doing some good. My excuse for being somewhat enthusiastic in this line of work is perhaps justified by the results obtained thus far in my own practice. I do not stand here in the presence of so many fine operators with a view of changing the good work you are doing at your chairs daily. I simply offer this method as accessory.

Any means whereby the burden of tooth-filling can be lessened to both the patient and the operator without losing the artistic effect and permanency of the operation seems to me both justifiable and commendable. In the special field for which this work is designated it has given pleasurable satisfaction; pleasurable because of the less tedious waste of time and vitality of both patient and operator, overcoming many annoying perplexities incident to the filling of inaccessible and large cavities. The preparation of cavities for porcelain inlays has been so well and thoroughly given in the recent dental journals that a repetition would seem unnecessary, as the details given apply equally well

* Read at the twenty-fourth annual meeting of the Vermont State Dental Society, March 22, 1900.

to gold inlays as far as preparing the cavity is concerned, remembering, of course, that gold has a wider field, and can be utilized to a greater extent, restoring fully broken and decayed molars to usefulness where porcelain would be impracticable.

When there are large undercuts, as is often the case in the crown of molars, cut away all thin edges of enamel, and excavate thoroughly. If the cavity is deep, cover the floor or bottom of the cavity and all undercuts with some good non-irritating



FIG. 1.—Buccal cavity in lower molar. FIG. 2.—Matrix or duplicate of same cavity. FIG. 3.—Matrix from impression of molar, Fig. 4. FIG. 4.—Gold filling inlay, made in matrix Fig. 3, and cemented into cavity in molar. FIG. 5.—Tooth with labial cavity ready for impression. FIG. 6.—Impression of same cavity in Chase's Impression Compound. FIG. 7.—Matrix made from impression in Fig. 6. FIG. 8.—Gold inlay or filling made in matrix Fig. 9, and cemented into cavity. FIG. 9.—Matrix of cavity in Fig. 8. FIGS. 11, and 12.—Completed fillings made in fusible alloy matrices by the Chase system.

cement, varnish the same with sandarac, and in a short time the cement will be hard enough to trim, leaving the side at right angles to the floor of the cavity. This applies to the shaping of crown cavities where decay has progressed rapidly into the dentine, and you wish to save as much as possible of the occluding

surface. The labial cavities of the anterior teeth and the buccal cavities of the bicuspid and molars will not as a rule require any preparation with cement, as the shape of these is usually larger at the orifice.

Approximal cavities of incisors and cuspids should be cut away and properly shaped from the palatal and lingual sides. Approximal cavities of the bicuspid and molars should be so formed that they will present a pyramidal shape with the base of the pyramid at the occluding surface. The object of this shaping of the cavities is to facilitate the withdrawal of the impressions.

The impression compound which I shall show you is the result of a long series of experiments in this line of work, and I present it to you with the full confidence that it fills a long-felt want not only for the making of matrices for gold and porcelain inlay work, but for reproducing the exact shape of the crowns and roots of teeth for crown and bridge-work. When ready to take the impression, carefully dry and protect the cavity from moisture, and with a small piece of the compound between the thumb and index finger force the material into the cavity, using enough force to make sure that the compound occupies every part of the cavity. Gently withdraw the compound, and examine to see if you have a perfect impression of the shape, angles, sides and edges of the cavity. When you can use an impression cup it is advisable to do so. If there is any tendency of the compound to adhere to any part of the cavity, a little lycopodium sprinkled upon the surface of the compound will obviate any trouble in that line. Around the impression place a small band of very thin German silver, copper or platinoïd. This band should be at least an eighth of an inch larger than the cavity impression and about one-half inch high. Be careful when placing this band that you do not disturb the impression. The edge of the band should be pushed into the compound, so that there will be no chance for the alloy to flow underneath. The impression is now ready, and a matrix can be made with fusible alloy. To obtain a fusible alloy suitable to make a perfect matrix has been a source of quite a little trouble and expense. Most of those in the market are wholly unfit for the work. I have experimented until I am happy to say that I have succeeded in making one that possesses the essential qualities, viz.: one that melts at a low temperature and yet is hard enough to make a sharp and perfect reproduction of the impression, is non-shrinkable, and does not deteriorate by remelting.

As soon as the alloy is poured into the band onto the impression, tap the impression cup gently on the table, or when the cup

has not been used, the compound should be held in a napkin or tissue paper, as in the act of taking the impression between the thumb and finger, the napkin will prevent burning the fingers should any melted alloy escape. The tapping can be done the same with the hand until the alloy begins to set. This will insure a sharp reproduction of the edges of the cavity, and a little practice will enable you to do it easily.

After you have produced a matrix imbed this in a little plaster-of-Paris, either on the bench or on something that will make a firm foundation, or fasten in the bench vise and proceed to fill with gold, or dismiss your patient and make the filling at your leisure; gold foil pellets, ropes or fibre gold can be used for making inlays, holding it with an instrument until you get it well anchored, or if the shape of the cavity is such that it may start, one or two retaining pits can be made at the bottom of the cavity, burnish thoroughly and partly finish the filling in the matrix.

To remove the filling hold the matrix over a spirit lamp and as soon as the alloy melts a little from the edge of the inlay give the matrix a quick jerk and the filling will come out clean, and a perfect inlay to the tooth cavity.

In building up a bicuspid or molar tooth, after the cavity is prepared mould a little wax into the cavity, and ask your patient to close the mouth. This will give the articulation of the opposite tooth; this placed into the matrix and arranged on an articulator will enable you to complete the occluding surface without any subsequent grinding; when placed in the tooth cavity, make slight undercuts with a wheel burr at the sides, also some little depressions in the base of the inlay. Use any good cement. mixed to a creamy consistency.

Before the final adjustment of the inlay try it in the cavity and see if it fits perfectly at the edges; if it does not, a perfect fit can be secured by holding the filling with an instrument and burnishing it to the edge of the cavity.

Fill the cavity with the cement, and force the inlay into place, holding it firmly for a few moments, and then coat the edges with sandarac varnish. After a short time it can be finished up or left for a subsequent sitting.

It may seem to you from the description of this operation that it must take a long time to make these fillings. I can only say that you will be surprised, after becoming familiar with it, how quickly you can make them.

I wish to say before closing that you will find the impression and matrix system equally as good for porcelain inlays, and you will get positive results by burnishing the foil into the matrix,

and if from any cause you do not get a perfect inlay the first time you can duplicate it without access to your patient.

This, gentlemen, in brief, is the way I make inlays. The method is easy, practical and artistic. I hope that you will take as much pleasure in doing this work as I have in imparting the results of my labor.

ARTICULATION AND ARTICULATORS.*

BY J. A. ROBINSON, MORRISVILLE, VT.

*"All things I thought I knew ; but now confess
The more I know, I know I know the less."*

The subject of "Prosthodontia," using Dr. Ottolingu's new word has received but little attention of late years from this Society, especially that branch relating to articulation of artificial teeth. I present it as a part of our work which needs vastly more attention than it has received from us, as the more one studies it the more we will find there is to know.

I have been at work on several different ideas pertaining to this subject for some time, and have arrived at this conclusion: The successful cases we have are more accidental than intentional. I will as briefly as possible summarize the work others have done in this line before I bring to your attention some things which I found were interesting to me and perhaps may be to you.

We all know of the life work of the late Dr. Bonwell on this subject; of his circles, equilateral triangles, etc. You will find many solid truths in his works, though there may be several things therein that are not essentially necessary to the proper articulation of the teeth, still there are ideas which, if rightly understood, will help us to be more certain in this line of work. There are certain laws which govern every motion of the human body, and the nearer we approach those laws when supplying artificial members to that body—be it teeth, eyes, hands, feet, arms, legs, or what—the more perfect the use of that substitute.

While Dr. Bonwell may have gone further than he need in some directions, he did not carry his work far enough in some others, as I will explain further on. I think the Bonwell articu-

* Read at the Vermont State Dental Society meeting, March 21-23, 1900, St. Johnsbury, Vt.

lator was perhaps the first step in advancement in the right direction. The work as done on the ordinary articulator in use can be but faulty and is tolerated because of its necessity. I believe it is possible to do better and more perfect work in this line.

Too much of this work is left to the three-dollar men, and for want of anything better the time is soon coming when that class of work will answer the purpose as well as better because of that necessity. Perfect work cannot be done on the ordinary articulator; there are certain movements of the human jaw that should be had in the articulator to get the best results. If there is an average of four inches from the centre of one condyloid process to the other, and the same from the centre of either condyle to the centre line at the point of meeting of the cutting edges of the lower centrals, does it not stand to reason that artificial teeth set up on an articulator built on the Bonwell triangle would be more sure of perfect articulation in the mouth? I would most seriously ask you to study Dr. Bonwell's writings. Read and re-read his last articles in the September and December numbers of the *Items*. He has there placed the subject in a much better manner than I can. I wish you would also read carefully the paper on Articulation by Dr. Snow in the January number of the *Cosmos*.

In these I think you will find the necessity of using an articulator of different construction from the ordinary one, which measures but two inches or less across the condyles or bearings; one which will give the motions of the lower jaw or maxillary, not only in the hinge or direct up and down swinging motion, but more particularly in the lateral motion or the motion made in chewing. After studying these you will not wonder at the remarks made by many who, wearing artificial teeth, say they do not chew their food but simply pound it. Their teeth were made to be used in but one way, and that directly up and down—any other motion would tend to dislodge their plates.

I wish it understood I am not advertising or advocating any particular articulator, but in order to make my work a success, I have used several different ones, and I propose to show several here, and shall give what to me are the strong and weak points of such as I have.

You all have seen the Bonwell articulator. I need not say much about that one. The Gritman, while embodying the better qualities of the Bonwell, excepting its lightness, simplicity, and freedom of vision of the work from the back, goes a little further, and provides for adjustment of space between the bows, and also trying to better imitate the natural movement by pro-

viding for the downward motion of the condyles at the same time as giving the lateral movement of the lower maxillary. You will do well to read Dr. Gritman's paper in the November *Items*, which is very readable and instructive. I have with me one of those articulators, which I have used for about five months, and while I think it can be improved in some ways, as I will show later, I will say this: The work done on it has been very satisfactory to myself and patients. I also have the Snow face bow, which, though made to be used with the Gritman articulator, can be adapted to any of those made wide. This has proven in my hands to be another advancing step.

It is but a short time ago the idea as to how the models went into the articulator made any difference with the work, was brought to my attention, nor have I taken any particular trouble to get the mesial line at the front of trial plates within the prescribed four inches from the joint, to say nothing as to whether the line was in the centre of the articulator, or the back of models were up or down, or swung to either side from the position they should be in. I take it that "right is right," rather than "what is is right," and if we wish to meet with universal success, we must have everything as nearly right as possible. If the face bow was used by operators to set their models, more successful work would be the result, I verily believe; since using it my success has been gratifying, as the teeth when in the mouth more correctly fill the place of the lost natural organs.

I wish now to take you a little further towards what is, to my mind, a bettering of results in the articulating of artificial teeth, the better to imitate the natural ones. I do not say what I have to offer is new, for it may be old, but, if so, I have never seen it described or used.

The work of those I have mentioned, as well as of others, is all in the right direction. There is but little to be added to their work, and I wish I could as ably express my ideas as they have theirs.

I claim the usual relation of the jaws, or rather the two sets of the human teeth, are as a ball and socket, or, better, a ball and cup, as some might think I referred to the ball and socket joints; not so. But to explain: the lower jaw carried either laterally or forward and back, will resume its place when carried to its natural position with a motion as though a cup was being placed on the side of a ball just adapted to it. Take a small, straight edge like a pencil, lay it across the lower teeth, and you see that while the buccal cusps touch the pencil, the lingual do not. By reversing the pencil to the upper teeth, you will find the opposite; the pal-

atal cusps touch while the buccal do not—showing the idea of the ball and cup, the upper teeth forming the ball, while the under form the cup.

The line drawn in conformity to the faces, or grinding surfaces of the posterior teeth is a curved line, and the arc of a circle varying from a very small one to almost a straight line. I have used the arc of a circle twelve inches in diameter, as that perhaps is an average and a fair one to work on, though you will find many which are much smaller.

Looking at the Bonwell diagrams in the *September Items*, illustrating the teeth in mastication, you find he has the line drawn across the masticating surfaces of the molars, a straight line. I claim the line should be the arc of a circle. Then, when the lower jaw is carried to the left in the act of chewing, the cup slides to its place on the ball and stops against the cusps on other side.

Dr. Bonwell curved his line toward the ramus, but not in the direction I have just mentioned. The teeth, if without cusps, and arranged as in Dr. Bonwell's drawings, would continually slide from side to side; while arranged as I claim is right, would come to a common centre and remain there until again carried to either side as in masticating.

I will give you an outline of my methods: Impressions, models, bites or articulation taken and made as usual, being sure each step as taken is correct. The bite-plates are then locked together with the little bite locks made for that purpose, and which I devised several years ago, as illustrated in the *Cosmos* of August, 1896, also in "taking impressions of the mouth" by the S. S. W. Co., 1898. These do away with all the uncertainties of the usual method of marking them with a series of crosses, etc., taking from the mouth separately and trying to get them into the same position they were while in the mouth. By locking and removing them together, they must needs be just as they were in the mouth; then by using the face-bow you will get the models in the articulator, so there is no doubt but they are right. Then set up the front teeth of both sets, fastening them to trial plates slightly, as you may wish to change some of them a trifle. Then, turning back the upper bow or top of articulator with the upper model, and attaching the convex disc, setting the remaining under-teeth to the disc, making sure the inner cusps touch it as well as the outer. Thus, making plain the reason for wanting plenty of space at back of articulator the better to view the work, even the front under-teeth are to be set to the disc.

After the lower ones are set, remove the disc, turn back the upper model, and articulate the teeth to the lower ones; when I say articulate to the lower teeth, I mean just what I say, and not merely touching them on the outside or buccal cusps; be sure of the articulation on the palatal side.

It is sometimes difficult to secure teeth that will conform to this method without some grinding—not of the cusps, if avoidable—to shorten them so as to go under the arch. It is also difficult to use gum teeth as now made. I am sometimes obliged to turn a bicuspid or molar round wrong side out to make it conform to my idea. Sometimes, when articulating to natural under teeth, I crowd a tooth in nearly out of sight, at other times turn nearly or quite a quarter round. The over-bite of the superior incisors should not be enough to interfere with the perfectly free lateral and forward and back motion of the lower maxillary.

When the plates are completed, the lower set is touched up on the convex side of a corundum wheel, which is made on the same arc as the disc, and the upper on the concave side; this is to grind off any particular cusp that might interfere with the free motion of the jaws, as the slightest obstacle may tend to destroy the easy sliding movement necessary to the perfect working of the teeth.

The wearer of plates carefully made, following these methods, has, I believe, as nearly a perfect denture as it is possible to make; they do not have to pound up their food, but can masticate or chew it as well as is possible with other than the natural organs. I have had the very best of success with my cases since adopting these methods.

I will call particular attention to two or three things: First, the usual method of articulating an upper set to the natural lower teeth; as a general thing the masticating surface of the lower teeth turn into the mouth perhaps more and more as time goes on, and when we set up teeth to articulate with such, there is a tendency on the part of many to articulate simply to the buccal cusps—more especially in using gum or block teeth. This will undoubtedly make a set that looks well out of the mouth, but it is like eating with pegs to use such a plate. It should be our aim in all our work to give our patients the best we can. With teeth articulated like some I have brought with me, how much better the act of mastication can be carried on than if the teeth touched but on buccal cusps! Secondly, articulate the teeth in such a manner that when the lower jaw is carried forward, the pressure or bearing is on some of the back teeth rather than on the incisors, also the same while using the lateral movements.

Some think there would be no difference between teeth set up on articulators two and four inches between bearings. There is a difference. The circle or arc of a circle cut from the centre of lower centrals is much different, whether the compasses are set one or two inches from a line drawn backward from said centre and intersecting a line running at right angles from it, representing the line of bearing of the articulator, or from condyle to condyle; and as there is this difference, and one is right, the other wrong—and right is and must be right, and just as cheap, let us adopt it.

You expect me to show an articulator of my own make, and inform you I think it a little ahead of the others in some respects. It does have several features to recommend it to your attention; it is not quite so nicely finished as those which are made where such work is done. One thing is the space at back to facilitate the work of setting up the teeth, observing the inner cusps should make work a trifle easier; it is light and still strong; it is adjustable where it ought to be; it has the movements of the lower mandible more correctly than some others. It is not yet completed. I have been unable to do the work on it that I wished on account of our machine-shop being too full of work to bother with it. I have not the disc connected, which is to be done with a ball and socket joint that it may be properly adjusted and held there firmly. The Gritman, while it has the sliding motion at the joints to imitate the downward motion of the lower jaw at the same time as the forward and lateral movements, still when in use the bows are nearer together by one-eighth inch when lower bow is brought forward than when at rest. I have overcome that fault in mine, as you will notice the bows are further apart when in that position, thus doing away with the breaking down of plaster cusps when articulating teeth to such. The upper bow can be turned back further than the Gritman, and is easily removed when desired. The springs used are too stiff in all of them. I have used mine with but a small rubber band, and some of the time without any sort of spring, as when left alone the weight of the cast will usually bring it to its right position.

I make my principal claims on the disc, and method of articulating the teeth.

I have with me several cases articulated by my friends. When sending the models and teeth I asked them to do the work just as it is done in their office in every-day practice. There are no marks on them to show who did the work, and you are at liberty to examine them and make all the comments you please, for you will hurt no one's feelings, as we are here to learn all we

can regarding this subject—in fact, you are asked to criticize the articulations. There are several sets of my own with the lot, and I expect you will select others as being the best, most correct work; if that is the case, it will make no difference to me, for I believe I am right, and shall stick to my ideas. These cases were set up on almost every conceivable make of articulators.

I have also several of the most approved articulators: the Gritman, the Antes, one made by the C. D. M. Co., the Bonwell, as made by the S. S. W. Co., having a screw to adjust the space between bows, which was not advocated or used by Dr. Bonwell, but to my mind is quite essential; the Bridge, made by a young student in the Boston Dental College—this one has several good features, but lacks the essential width of bearings. I also have a modification of the Bonwell, made by myself.

The Gritman is the one I have used the most, as I have had it the longest. It has not enough space for viewing the work from the back; the inability to turn the top over further is to me a detriment, as is the lowering or nearing of the bows when giving forward motion to lower bow; this latter trouble can be easily remedied by filing off the plane on which the regulating screw works to a proper bevel. It is of the right width, uses bows, and on the whole I am much pleased with it. The Antes has several good points as well as bad ones; the lacking of lateral motion may be an advantage to some, but not particularly so to myself; the locking back of the top is all right. It might be made a first-class articulator with a few changes; it is not wide enough at the bearings, has no provision for raising the upper bow when springs are deflected; the spring in this as well as in others is stiffer than is necessary; the vision of work from back is not materially obstructed, but would be if made wider, except across bearings. I much prefer the bows to the cast-plates to which to attach the models. The one sent me by the C. D. M. Co. is very nicely made and finished—too nicely in some of its parts; it has but the up-and-down swing, very much the same as the ordinary one in use, and excepting its being adjustable to thick and thin models, is the same; is but two inches wide across bearings, and does not have any lateral movement.

The No. 7, or improved Bonwell, is similar to the original, and is light, strong, well made and nicely finished, and is all in all a very good articulator, needing but two or three changes to make it all right. The plate for the adjusting screw is too small, not of right angle, and it does not allow of different thicknesses of models. The Bonwell, as made by myself, does away with part of these objections, as I have more space to view the work

from the back, the adjusting screw above out of the way, and the angle or bevel of plate below the screw is such as to drop the lower model when using lateral movements.

The little crown articulator sent me by the makers of the Antes is an improvement over any I have before seen.

I wish to thank my friends who have helped me so kindly by setting up the teeth I sent them, also the manufacturers for the different articulators that have been sent me. They have all aided me in my work. I have endeavored to bring you something that would instruct as well as interest you, and all these have been of assistance in the information gained by comparison.

Do you have upper plates to repair that are broken or cracked down through the centre? Nearly all of us do. I think they are cracked or broken principally from one of two causes, perhaps both. One cause is the setting together of the jaws, while sleeping, so hard and tight that something has to give; I believe this causes more trouble by grinding or knocking off the teeth than breaking the plate. The chief cause of the cracked plates to my mind is articulating the teeth on the principle just the opposite from what I have been describing, *i.e.*, using the under teeth as the ball, the upper as the cup; then when in use the upper teeth are spread every time the mouth is closed, owing to the wedging motion. The same conditions exist when articulating upper teeth to the buccal cusps of the lower ones.

One thing more I have to say: I never sacrifice adaptability to looks when articulating artificial teeth, and that is my first and chief reason for using plain teeth, and if we had a more perfect imitation of the natural gums I would never think of using block teeth unless the patient particularly demanded them; they make the best looking set out of the mouth—there is no disputing that—but that is the only thing to recommend them, for you cannot articulate as you should and keep good joints. If you are making a set to *look well out* of the mouth, use block teeth, but if you are making a set for *use in* the mouth, use plain teeth every time. I wish to be emphatic on this point: never sacrifice adaptability to looks. You may possibly find you have really both when you put your case in the mouth.

In connection with Dr. Robinson's paper he had some twenty sets of teeth that were articulated by different plate-workers, making a very interesting and instructive display. It cannot be said that many of them were perfect specimens of the art, for there were but few that would be accepted by some of the better

operators. As there were no marks on them to enable one to know who did the work, no one could feel hurt at just criticism. The greatest mistake made by many is in articulating (they do not articulate, so should not be called articulations), the setting the teeth so they only touch the buccal cusps, and do not furnish any grinding surface. The set the Doctor showed, where he turned the second bicuspid and molars inside out in order to articulate with plaster lower molars and bicuspid, indicated the idea very plainly; others, using gum teeth especially in order to keep within line, sacrificed the articulation for sake of the looks. Dr. Robinson does not approve of that unless in case of the eight front teeth, including the first bicuspid with the six anterior teeth. You must care more for adaptability back of them. He advocates the throwing away of the cuspid and using the second bicuspid in their place when patient has but few lower teeth, and in setting up an upper set. Many a good-looking articulation set up on an ordinary articulator showed pronounced defects when shifted to an articulator having the lateral and forward and back motion, as is made in chewing. As soon as articulator was used by depressing the springs, the teeth would fall like hail (being mounted in wax or gutta-percha only). Some under teeth were so set in from the arch that if made up in actual practice the tongue would lift the plate every time used. While some were set up somewhat in conformity to Dr. Robinson's method, others were directly the opposite.

As to the articulators, the one the Doctor calls his own has several points to recommend it, and he was asked by many as to when they could get one like it. It was to be regretted it was not completed, so it could be shown up to better advantage. The Gritman was considered too heavy, and as nothing is stronger than its weakest part, so, too, with this articulator; its weakest place is in the joints, and as it springs there, there is no necessity of making the rest so heavy. It will also break off plaster cusps, as it is not constructed rightly to raise the upper model a trifle. The Bonwell, as handled by the C. D. M. Co. and the S. S. W. Co., are defective in several ways, as mentioned in the Doctor's paper. The Bonwell, as made by Dr. Robinson, corrects many of those objections. Nothing is to be said for those similar to the ordinary articulators in use for years, only a word of advice to those using them: DON'T. And as to those like the Antes and the Bridge, which have the lateral and forward and back movements, but lack the requisite width of bearings, there can be but little to say, except to advise the makers to make them wider, similar to those first mentioned.

The Doctor found a new articulator in one of the depots after getting to St. Johnsbury, one invented by Dr. Cushings, of New Hampshire. It is too light in its construction, and would easily get out of condition—too complicated.

The greatest fault to be found with the articulators like the Gritman or Snow (which it should be named), the Bonwell and others having requisite width, but still lacking in not having space enough at back to easily articulate the teeth. And this may be one of the causes of poor articulations, the operator being often unable to see the working of things inside, and so neglects to give it proper attention.

KEEPING CAVITIES DRY FOR DENTAL OPERATIONS.

· BY R. E. SPARKS, M.D., D.D.S., L.D.S., KINGSTON, ONT.

The advantage in all cases, and the necessity in some, of keeping cavities dry for their successful filling, suggests the above as a subject for a paper. Amalgam is probably the only filling material which may be used with any degree of success in cavities exposed to moisture.

That better results may be expected, even with amalgam, if the cavity be dry, is not likely to be challenged. Very little success may be expected with oxyphosphate or oxychloride of zinc cements if the cavity be not dry; and, indeed, to obtain the best results with these cements it is necessary to keep the filling dry for some time after insertion. We find many otherwise good cement fillings entirely washed out at the cervical walls. I attribute this condition to the introduction of moisture at that point when the cavity was filled. This is a serious condition. Better far that the fillings be worn upon its grinding surface, as the patient is deceived by the apparently perfect condition of the filling until some day, or perhaps worse, some night, he awakens to the fact that the tooth which had been so comfortable for, it may be, some months, has become unbearably painful. Examination reveals the fact that the cement has been washed out at the cervical, and decay has proceeded, involving the pulp, and that the filling has utterly failed in the object for which it was inserted. Non-cohesive gold may also be inserted with some degree of success, in favorable cases under moisture, but dampness entirely overcomes the cohesive property of gold.

With these facts before us, we turn our attention to the different methods of keeping cavities dry during the operation of filling

teeth. First we will consider the mouth-napkin, which alone, or in connection with wedges, duct compressors, etc., formed the only protection against moisture in dental operations until the introduction of rubber dam. And it may be interesting to the young operator who may feel that he cannot trust himself to undertake the simplest filling of gold without the application of the dam, that that luxury was unknown to the profession until its invention and introduction by the late Dr. Barnum, of New York, in the year 1867.

Until the introduction of amalgam, the only materials available for filling teeth were gold, lead, tin-foil and gutta-percha; and the only means of keeping the cavities dry was, as I said before, mouth napkins, wedges, duct compressors, etc. The size of the mouth napkin is a matter of taste with the operator. I prefer a simple piece of bleached cotton (old cotton is softer and more absorbent than new), about 3 by 5 inches, unhemmed and folded lengthwise; folding the two edges towards each other and folding upon itself. To introduce it into the mouth, put the end of one finger at the centre of the folded napkin, press it to the desired position, forming a U with the ends protruding; the one end tucked between the cheek, or lip and teeth; the other, if a lower case, tucked between the teeth and tongue. By asking the patient to allow you to put the napkin under the tip of the tongue, the tongue will rise, admitting the napkin readily to pass under. If the operation is likely to be prolonged, or if it be necessary to allow the teeth to come together, two napkins may be used; doubling and forming a couple of rolls, place one between the cheek and the teeth, and the other under the tongue.

This will admit of the teeth coming together as in testing the articulation when cementing on a crown or bridge. When adjusting to the upper jaw, the free end may be spread over the lower teeth and tongue, where it will catch pieces of filling which may drop from the cavity. If the cavity to be filled be simple, or even compound, if it do not encroach upon the gum and is to be filled with plastic material, this may be all the protection it may need. If, however, it extend above or below the gum margin, and especially if the gum has been wounded in the preparation of the cavity, additional means must be resorted to. If the cervical wall of the cavity do not extend much above or below the gum margin, a small, thin wedge may be pressed in firmly and the ends cut off with a wedge cutter. If, however, the cervical wall extend above the gum margin, a matrix may be used successfully for a plastic filling. When a wedge is used it should be inserted and the ends cut off before the napkin is adjusted.

If a matrix is to be used, the napkin should be adjusted before the matrix is applied. In either case the filling (cotton, spunk, etc.) should be prepared, that as little delay as possible take place before the filling is inserted. A duct compressor, comprised of a loop of spring wire having a button on each end, may be adjusted by one button resting on the outside of the cheek, while the other covers the mouth of the duct on the inside.

This lessens the flow of saliva, and is useful in prolonged operations. By the use of these simple means of keeping cavities dry, much time may be saved in short operations. If the operation must necessarily be a lengthy one, as in case of a large gold filling, it will be well to adjust the rubber dam. Some hints in connection therewith may be useful to young practitioners.

As a rule, the dam must cover more teeth than the one to be filled, or it will be in the way. For instance, if I wished to fill a cavity in an incisor, I would put the rubber over both incisors and the lateral adjoining the tooth to be filled. If, however, the cavity were in the fissures of a molar, it might only be necessary to put the rubber over that tooth alone. After deciding how many and which teeth it is desirable to cover, the next step is the making of holes in the rubber sheet. The comfort and safety with which the filling may be inserted depends not a little upon the selection of a piece of rubber the right size, and the punching or cutting of holes at the right points. The sheet selected should be large enough, and the perforations made at a point that will admit of the edges protruding a little beyond the lips when the mouth is open. This will prevent saliva from flowing over the edge of the sheet and into the cavity.

When making perforations, the size of the holes and their distance apart should correspond with the size and distance apart of the teeth to be covered. It must be noticed also whether or not the cervical wall of the cavity to be filled extends far above the gum margin. If it do, more space will be necessary between the holes than if it do not, or it will be found that when rubber has been forced up beyond the cervical wall of the cavity, it will be stretched away from the adjoining tooth. Care must be taken not to leave too much rubber between the teeth, if the cavity to be filled be an approximal, or it will fold up, obscuring the cervical wall. Before adjusting the dam, everything needed for filling the cavity should be in readiness, so that the rubber, which to many is very objectionable, may be retained in place as short a time as possible. The next step is to adjust the dam to the tooth or teeth. This is not always an easy task. If the teeth be close together, a little glycerine smeared over the holes in the rubber

will very much facilitate it going to place, and is much less objectionable to the patient than soap, which has been recommended for the same purpose. A piece of ligature twine passed between the teeth while the rubber is being stretched over will often force it into spaces where it otherwise would not go. The "Ivory" clamp, which has a flange on each jaw, over which the rubber may be stretched, is an admirable device for adjusting the dam to molars or bicuspidis.

The clamp having been adjusted to the tooth, the rubber which has been stretched over its flanges is slipped off, and takes its place around the neck of the tooth. The rubber having been adjusted, the next consideration is its retention to place during the operation.

There are many means employed for this purpose. The simplest is to draw it up tightly to the gums, then turn the draught lightly towards the end of the tooth. This will turn the edge of the rubber surrounding the tooth towards the gum, and, if the hole has not been made too large, will prevent leakage.

If there be danger of the rubber being accidentally pulled off before the filling is completed, it will be necessary to retain it more securely. This may be done by clamps, wedges, or ligatures.

If the cavity be between two teeth, a wedge will serve the double purpose of retaining the dam and separating the teeth, or retaining the space which may have been previously made by compresses. If there be plenty of space, a fine ring cut off very small rubber tubing will hold it quite firmly if stretched over the tooth or teeth and pressed up to the gum, or a ring cut off large tubing may be passed over two teeth as a figure of eight. That most generally used and covering the greatest variety of cases is the dental ligature.

This may be of floss silk, gilling twine or spool linen. It should not be too fine, to allow the rubber to stretch over it readily, nor should it be too coarse, as it frequently has to carry the edge of the rubber up between the gum and the tooth. It should be waxed, as it will then adhere to the neck of the tooth, will hold more firmly while being tied, and will not absorb moisture. Time may be saved by ligating two or more teeth with the same ligature. To do this, pass the ligature once and a half around one tooth, this will leave one end on the palatal, the other on the labial side of the tooth. Pass to the next tooth, and do the same. This will leave both ends on the labial side ready to be tied; and one tying answers both teeth.

Among the most troublesome cavities to keep dry are those found on the labial surface of teeth extending under the margin

of the gum. The most convenient and satisfactory method is by means of rubber dam, retained by clamps peculiarly shaped for such cases. Such cavities may be filled in teeth in the upper jaw without the dam. Protect by napkin, dry thoroughly, and pack under gum margin a string-like strip of spunk which has been cut for the purpose. Or better, saturate the spunk or a fine twist of cotton, with a quick-setting cement and pack under the gum. If this method be adopted, it will be necessary to have the cavity prepared and everything in readiness before applying these compresses, and care taken not to allow an instrument to slip, lest the gum be wounded. If any reader of the JOURNAL has any other methods of keeping cavities dry, we would be glad to hear of them through its pages.

FUNCTIONS OF THE DENTAL PULP.

BY S. B. PALMER, M.D.S., SYRACUSE, N.Y.

Unquestionably to Dr. W. D. Miller, of Berlin, belongs the credit of the discovery of the micro-organism theory of the etiology of dental caries. The earnest endorsement of his findings by Dr. Williams, of London, and Dr. Black, of Chicago, seems to have established the theory in the minds of a large majority of the dental profession, that the long-sought cause has at last been discovered, and that the remaining opposition is considered of no importance.

In this connection it seems proper to give an outline of the work that had been done on this line of study previous to Dr. Miller's announcement. The following condensed quotations are from remarks by Dr. C. N. Pierce, Philadelphia, which may be found in the *International Dental Journal*, June, 1898, p. 389:

"Mr. President, Ladies and Gentlemen: We all recognize that the ideas of the present day have evolved from the past, and therefore I thought it might not be amiss to run hastily over the various facts in the experience of the last century and a half, regarding the causes of dental caries.

"Those of you who are familiar with the facts remember that Bourdet and Jourdain, in 1754-1756, published a paper, etc." (I will not take time to give the subjects.) "It is most singular that we have no paper on this subject of any importance from that date until 1835 or 1840. Then Dr. Robertson, of Burlington, gave his views upon the subject. He was followed by Dr. George Watt, of Ohio. Nothing further was advanced until we had the views of Magitot. Following Magitot, Desirabode published a

paper; after Desirabode came John Tomes. Following John Tomes, Bridgman, of England, said decay was due to a chemico-electrical action. He took the ground that the tooth was made subject to the influences of acids by having its electrical conditions disturbed.

"He was sustained by S. B. Palmer, of Syracuse, who holds the ground to-day that electrical conditions are responsible for decay. This was the condition when Dr. Miller took hold of the subject. And so to Dr. Miller we are indebted for our present theory of decay in teeth, parasitico-chemical, because produced by micro-organisms and the acid introduced by their multiplication.

"This is the theory that we accept to-day, and I believe it is a correct theory so far as we have any knowledge of caries or decay in the mouth. And that is the way the case stands at present in regard to decay of the teeth."

This was published in 1898, and a ten-page paper upon this subject, written by Dr. Miller, may be found in *The Cosmos*, March issue, of 1900. I will not attempt to discuss the matter here. It is based upon the physical phase of caries, as the preceding discussions have been, and does not apply to the organic conditions of the class of teeth which I have taken great care to define.

By statements of experiments made in the last writings of Dr. Miller, the reader can see that the physical side of the question is still set forth as *the* cause of dental caries to the exclusion of the organic side. Indeed, the closing summary of the article dismisses the organic phase of recurrent caries, as unworthy of notice as may be seen. "To sum up the whole matter, the presence, often in an increased degree, of the causes which primarily brought about the caries, together with points of diminished resistance, resulting partly from the inadaptability, partly from the imperfect manipulation of our filling materials or subsequent changes in the fillings themselves, furnish so apparent a solution of the causes of recurrent caries that it is not necessary to bring factors into requisition whose action has never been demonstrated." Thus evolution in dental science upon the organic line of investigation which was introduced prior to Dr. Miller's discovery remains undiscussed, and as just quoted, "it is not necessary to bring factors into requisition whose action has not been demonstrated." So from a physical point of view there is but one question under consideration.

Thirty years' investigation upon a given line of study, with the last half of the time subjected to positive denials of any scientific basis, may seem to the reader as time spent in vain. Such is

not the case, however, as evolution is a slow process, but the signs of the times indicate a crisis with the incoming of the twentieth century. Freedom of thought, and courage to express it, is witnessed in all lines of advancement which are based upon intellect. Even theology is moved to revise Church creeds in order to harmonize with more liberal demands. Church disciplines bearing upon amusements are leaving that question to the individual conscience, which is a step forward towards evolution, freedom of thought and self-reliance.

This writing is not intended to be presented before a society for hurried discussion. Therefore I will venture to introduce some doctrines in evolution that cannot be demonstrated to the satisfaction of physicists. In former writings I have based my investigations upon evolution of the laws and principles which are most familiar in physics, because *electricity*, with its interchangeable phases, is the one important energy that is apparent in all conditions of matter, vegetable or animal, and of all stands out most prominent in mind, will, intellect, etc. Up to the present time I have endeavored to avoid the present crisis as above mentioned, trying to convince opponents that the laws which direct the formation and support of organic bodies, even to imparting to each organ of the body consciousness and instinct to perform its specific functions in harmony with the life in the body. Such recognition has not been considered. We have before us more than fifteen years of Dr. Miller's labors, which are placed to his credit, and are recognized as scientific by readers of dental literature the world over. To make this more emphatic, Dr. Williams and Dr. Black have endorsed his conclusions, which gives assurance that the whole ground has been covered. Discouragements have been placed as barriers to further investigations, by statements that there is no proof to the contrary.

Now let us step from the laboratory to the operating room where, in discharge of duties, we are permitted to learn of the "*inner life* of teeth as well as to their environments." Remember we limit our subject to "developing, or young teeth," teeth that are in the active process of building, or still under the influence of pulp consciousness, so let us consider for a moment what this implies. It means life-energy not only in tooth pulps, but in every organ of the body. Life in a body is *the* active principle, the common centre; under its commissioned organs, every need of the body is supplied; consciousness is imparted to the pulp of a tooth to build it that it may fit its proper place in the dental arch, also to correspond with its kind upon the opposite side of the jaw.

The pulp of a tooth is an internal organ, and maintains that

relation during its activity. It builds the dentine portion in co-operation with the enamel organ until the crown is finished and ready for eruption. When a tooth is fully erupted the enamel organ ceases its activity. The pulp, however, continues its internal work, which is to build up *into* the surface of the enamel shell with dentine, not *against* it, as would be the case were the enamel as dead internally as it is claimed to be externally. What is to be understood by building up with dentine is, that the dentine is not *normally* calcified in a recently erupted crown, unless the operation has been retarded. In addition, I believe that the life energy which is imparted to dentine from the pulp is shared with the enamel until pulp action becomes extinct.

The question of the vitality of enamel is about to be answered by science, which admits of facts obtained from observations of the laws which preside over organic bodies, the difference in conditions determining the effects between physical experiments and observations of vital energy upon teeth in the mouth. One cause of disagreement arises from not being able to weigh or measure *life*. Vital energy is left out of nearly all the experiments in physics that have been presented to sustain the micro-organism theory. It will soon be a surprise to know, what a large number of practical dentists to-day believe, that dentine is changed in its density and powers of resisting caries; that enamel contains life-changes in color, etc. Most observers have been consulted by younger patients to know why drawing in cold air or drinking cold water caused pain in the incisors. I have repeatedly, upon examination, found the patient either reduced from mental strain, generally from over work in school, or from a temporary use of acid fruit. The latter cause is indicated by the unusual white appearance of the enamel. The former may have suddenly come to notice from acids, but generally the sensitive enamel is nearer the neck of the tooth. Understand, these caries are in mouths with teeth perfectly enamelled and no sign of abrasion. A good test is to fill a syringe with ice water and apply the point to the surface of the enamel, only allowing a drop or more to be forced out. Still another is to take a piece of felt, sharpen like a pencil, and pass it over the enamel, and one can make up his mind that life is back of the pain produced. I prescribe milk of magnesia, also to avoid acids and give instructions in regard to over-nervous strain, asking for the opportunity of another examination in a week. If the privilege is granted, nature will stand ahead of the microscope in deciding the question of the vitality of enamel. Within a week past, a lady asked the question as above mentioned, and it required less time to diagnose the cause. She desired to

improve the color of her teeth, and was using pulverized pumice as a tooth powder. Of course such usage would in time remove the enamel, and the case would have no bearing upon the question. I could not discover at any point where the enamel had been worn through. The warning came in time, and she will not again repeat the practice. She believes that enamel is living.

It seems difficult for many to comprehend that intelligence or instinct is given to the organs of living bodies. Let us for illustration take man, who is the highest form of life. I say instinct or intelligence, I do not wish to be understood that organs think or reason like independent living bodies, but as agents under direction of the will and *subordinate volition* of the creative energy and intelligence of the life proper. In this sense the pulps of teeth, like other organs, perform their functions as above mentioned. The pulp in a tooth conveys the sense of pain to the body, and it also becomes devitalized. It is commissioned to build up a tooth. The number of teeth, the variety and time for growth and eruption, shows harmony in the work under the direction of the one life of the body. I mention these points because an understanding of nature's action will make clear some physiological actions not so clearly defined in text-books. For instance, in the absorption of the roots of deciduous teeth, is there not harmony and consciousness displayed? The permanent tooth communicates to the *pulp* of the deciduous tooth, and it reverses its former energy, and by virtue of instinct the work of organic electrolysis dissolves the lime salts in the roots and they are removed. Do we need proof of this action? Where the germ of a permanent tooth has been destroyed, the roots of the deciduous teeth remain. To prove that the pulp of the deciduous tooth does its own taking down, destroy the pulp, or when caries has done the work nature is powerless to absorb the roots. Dr. Miller for years has opposed my statement that dentine is an electrolyte. The two conditions above cited are examples of my meaning. I know that ivory slabs wound with gold as described in his paper would not be an electrolyte. I know as well that the same connections worn in the mouth, that is, gold and living dentine, would produce opposite effects from the laboratory experiments. Again, the removal of the roots from the crown of a deciduous molar explains what is meant by electrolysis. Of course dentine is not an electrolyte physically speaking, while the fluids are. A bar of silver is not an electrolyte, but silver in solution in connection with the requirements is called an electrolyte. To enrichen the fluid, an ingot of silver is suspended from the positive electrode, and it is found that the weight, less of the ingot, corresponds with the plus of the article receiving the plate.

Two days before writing this, I removed the crown of a deciduous molar. It did not appear very loose, but a pink tinge to the enamel was evidence of its fitness for extraction. It was a mere shell; about one-third of the pulp chamber remained with the pulp, while in it the inner surface of dentine was smooth and white, except at the line where the dentine had been exposed above the gums, which had become slightly stained. This case explains my meaning of organic electrolysis. It is as far removed from the physical laws, as taught in physics, as life is from death. Thus the inaccurate rendering of conclusions which were obtained by submitting organic bodies which were under control of vital energy, to the laws which preside over devitalized bodies. In short, classing an undeveloped tooth with its living pulp with one whose pulp had lost its energy. The adaptation of filling materials to conditions of teeth belong to advanced dental science, and will be so recognized by the profession, in ratio to evolution in the minds of investigators to grasp the idea that life energy in the pulps of teeth exert an influence upon the dentine and enamel as long as its vital energy exists.

Proceedings of Dental Societies

ANNUAL BANQUET OF THE TORONTO DENTAL SOCIETY.

The Annual Banquet of the Toronto Dental Society, held at the Temple Cafe on the evening of February 22rd, was by all odds the most successful affair ever held by that Society, now famous for its happy annual functions.

Over one hundred dentists sat down to the very excellently spread board. The President of the Society, Dr. W. Cecil Trotter, "brought down the house" in proposing the toast to the Queen: "Queen of Great Britain and Ireland, Australia and New Zealand, Canada and Newfoundland, Empress of India, Queen of Egypt, the Soudan, Cape Colony, Natal, Orange Free State and the Transvaal." The toast was most enthusiastically received, after which Dr. Hart, of Brantford, sang in his best fashion "Soldiers of the Queen." The toast, "The Dental Profession of Ontario," brought Dr. A. W. Thornton, of Chatham, to his feet, who proved himself a most entertaining after-dinner speaker. He was almost moved to envy, he said, when he thought of the privileges enjoyed by the dentists of Toronto in having such a Society as he found them to have. If any dentist

in Toronto wished to retire to a country town to practice, and had a practice running anywhere from \$2,500 to \$3,500 per year, to exchange for one running anywhere from \$417.00 to \$425.00 per year, he would be glad to correspond with him. As a member of the profession in Ontario, he didn't like to say anything in the way of praise. He felt like the ward politician in Chicago, who was induced to stand for election, and had of course to make a speech. He said, "Ladies and gentlemen, yez all know me: I'm not much of a hand at spaach-making, so I ain't, but for honesty and intigrity, I bate the devil, so I do."

Before leaving the subject of the Ontario Profession, he wished to lay his tribute at the feet of one who, in his opinion, had done more than any other one to bring the profession to its present proud position. When we were students we thought the pastures over the fence were greener than our own, and other colleges were better than our own, but with riper years and judgment, and with the present beautifully appointed college building, and excellent faculty, he believed that it was only "distance that lent enchantment." During all these years, Dr. Willmott had labored with one high ideal in view, and he for one did not believe in waiting until after a person was in his grave before telling what he thought of him. Dr. Willmott's proud position as the acknowledged head of the profession in Ontario was not *chance* nor luck.

The heights by great men scaled and kept,
Are not attained by sudden flight ;
But they, while their companions slept,
Were toiling upwards in the night.

(Prolonged cheers.)

The toastmaster, in proposing the toast, "Dental Literature," referred to the poor business management of our Dental Journal. Perhaps the management didn't need money, but they allowed subscriptions to lapse and made no effort to obtain subscribers.

Dr. G. S. Martin, in replying to this toast, disclaimed any responsibility for the way the DOMINION DENTAL JOURNAL is managed or mismanaged. With our sparsely settled country, labor in dental literature is largely a labor of love. We have become so accustomed to depend on the United States for dental materials and dental literature that a large proportion of our dentists refuse to believe that anything good can come out of Canada. He had expected that Dr. Beers, of Montreal, would have been on hand to answer to this toast, but on account of sickness in his family he was prevented. The philosopher Bacon, said he held "every man to be a debtor to his profession," and it

was this debt that the speaker would urge upon the members of the dental profession. There is labor, but there is also compensation. He heard once of a Scotch minister trying to explain to a parishioner the working of the great law of compensation, how that for instance if a man lost one sense, such as hearing or sight, the other senses became so much more acute, or if he lost one arm, the other arm became almost as strong as two. "Aye, I see it now," said the parishioner, "there auld Sandy Broon, he has ane short leg, but if ye'll tak notice, the ither ane is a bit langer." The compensation in dental literature comes in the increased readiness with which we can express ourselves with practise. Those who take part in the programme of a convention will agree that they understand the subject assigned them to write upon as they never would without the effort of preparing a paper. To quote again from Bacon: "Reading maketh a full man, conference a ready man, writing maketh an exact man."

Dr. Hart was again introduced, and responded by singing a new patriotic song, "Take the muzzle off the lion," which was received with prolonged cheers:

Chorus—

Take the muzzle off the lion
And let him have a go,
Whisper to him "Majuba Hill,"
And at his chain he'll pull.
Is Boer or Briton going to rule?
That's what we want to know,
There's only room for one out there,
And that's John Bull.

Dr. J. B. Willmott, in rising to propose the toast, "The Dental Profession in the United States," took the opportunity to congratulate Dr. Thornton on his happy speech, and also Dr. Hart for his most acceptable singing.

We have ever been deeply indebted to the profession in the United States, and as he looked back over the past he remembered the notable members of the profession from the other side the international border, who have graced with their presence banquets such as this in Toronto, names such as the late W. H. Atkinson, Dr. Barrett, Dr. Butler, Dr. Melotte, Dr. Fillebrown, C. N. Johnson, J. G. Templeton, Dr. C. S. Case, and to-night his old-time personal friend, Dr. D. D. Smith, of Philadelphia. His friendship for Dr. Smith dated back to the time when he attended lectures in Philadelphia under Dr. Smith. It was not strange that with their 30,000 odd dentists in the United States they should produce many specialists.

Dr. Smith, on rising, was greeted with cheers and the singing of "Yankee Doodle." Disclaimed being an after-dinner speaker

—it was not his forte. He felt as much out of place as the gentleman who, a few minutes before, had found out he was at the wrong banquet, and had left hurriedly for another part of the same building where a British Empire League Banquet was in progress. As he looked over the dentists gathered around that festive board he was reminded of a story of a little girl, who said to her papa, "Papa, where were you born?" "In New York, my dear." "And where was mamma born?" "In San Francisco, my dear." "And where was I born?" "Right here in Philadelphia." "How in the world did we three ever get together?" He brought to the profession greetings from the dental profession in the United States. As Britons he brought to those present the sympathy of the best people of the republic to the south. The profession in Ontario had, in his opinion, no reason to belittle itself. The dentists of the United States have the same problems to contend with apparently as the Canadians. There is the departmental store dental office, for example. They had decided in Philadelphia to pay no attention to it, and had found that the best course. The profession had lost one of its best friends in the death of Dr. D. S. White. Dental literature was not in his opinion advancing very fast. Dr. Smith here read a criticism from a medical journal of the American Text-book of Operative Dentistry, in which several laughable statements were held up to ridicule. The only way to secure recognition as a profession from medical men was to prove worthy of that recognition.

In response to the toast, "The Medical Profession," Dr. Gordon expressed his great satisfaction at being present to represent his profession. So far as he knew the medical profession in Toronto were in hearty sympathy with the dentists, and did not treat them in the patronizing way referred to.

Dr. H. R. Abbott, London, replied in a particularly suitable way to the toast, "The Board of Directors," referring in a humorous way to the duties of the Board.

The singing of the National Anthem brought to a close the most satisfactory dental banquet ever held in Toronto.

NORTH-WEST TERRITORIES.

The Annual Meeting of the North-West Territories Dental Association was held, as per requirements of law, in Regina, on April 3rd. There was a very good attendance. The minutes having been approved, the President read the following address:

To the Members of the North-West Territories Dental Association:

GENTLEMEN,—The year just closed has been the most satisfactory one in the history of our Association.

The Dental Law was amended shortly after our last session, and its operations have been so beneficial that the North-West Government, the people, and this Association have each full reason for congratulating themselves. Under this law, the tramping through the country of irresponsible dentists has been practically stopped, and to-day, for the first time in our history, we can say we have a resident and proficient profession. It is my belief that to-day the profession in the North-West will compare favorably with the profession in any province in Canada.

It is with regret that I have learned that in one or two instances a member of our Territorial Association has violated the law of a sister province. We compel those of other provinces to respect our law, and it is but right that we should respect theirs. I would ask your attention to this matter, that you may devise means to discipline those guilty in this way.

There is to be a Dental Convention in Winnipeg in July, to which, I understand, Territorialists are to be invited. I hope you will take steps to secure as full a representation as possible.

The law in relation to students is working well. I have personally advised all our students that a thorough course will be demanded of them. This, chiefly in their own interest. The matter of a college which they are to attend is, to a certain extent, an open question. If, however, a student attends an American college, he is thereby debarred from practising in the greater part of Canada, and to attend the Canadian College insures a broad field for the student's future. As the Canadian college is undeniably one of the best on earth, I would suggest that you recommend to all students the advisability of attending the R. C. D. S.

During the year, I have asked to have the North-West second-class certificate, with Latin option, accepted by the R. C. D. S. for matriculation, without the necessity of a university matriculation. Owing to the North-West Territories having a higher school standard than Ontario, this could be accepted by the R. C. D. S. without lowering their standard. But up to the present there has been no affirmative response.

The reciprocity clause of the Dental Ordinance seems to have awakened an interest in the matter of provincial interchange of licenses, or Dominion registration, and I have every hope that shortly this Dominion of ours will be, dentally, a united country.

The time of meeting of the Association ought to be changed so as to permit of our meeting immediately after the close of the college term. This will permit of our students coming direct to our Board of Examiners without delay to them or expense to us. While a thorough course should be demanded of our students, no petty obstacles should be put in their way, or unnecessary cost or loss of time be forced upon them.

We require a new by-law covering the admission to or expulsion from our Association of men guilty of immoral conduct. Recent happenings, wherein men rejected elsewhere for immorality have applied to us, make this imperative. Our by-laws at present are not sufficiently explicit on this matter.

It is with pleasure that I notice an increasing good will amongst the dentists of the Territories toward each other. While competition here is as keen as elsewhere, there is none of that insane jealousy which is so disgracing our fellow dentists in other provinces.

During the year there have been hundreds of inquiries from all corners of America as to openings in the Territories. These letters and the answers thereto are submitted for your perusal.

The law has been enforced during the year with vigor and impartiality, until now a very wholesome respect is felt for it. I would suggest, however, that special arrangements be made to meet certain conditions in northern Alberta.

The work being done by the DOMINION DENTAL JOURNAL in elevating our profession and bringing Dentists from all parts of Canada into harmony, is worthy of your attention.

The Secretary-Treasurer then submitted his report and financial statement, which showed the Association to be in a very healthy financial condition, there being a good sized surplus in the treasury.

The recommendations contained in the President's Address were approved and crystallized into law.

The election of officers resulted in the following being chosen for the coming year: *President*, Dr. W. D. Cowan, Regina; *Vice-President*, Dr. L. D. Keown, Moosomin; *Secretary-Treas.*, Dr. P. F. Size, Moose Jaw; *Registrar*, Dr. E. C. Hobb Brook, Calgary.

The proposition to hold a dental convention in Winnipeg, open to all Western Dentists, was strongly endorsed.

Dominion Dental Journal

EDITOR:

W. GEORGE BEERS, L.D.S., D.D.S. - - - - MONTREAL, Que.

107 METCALF STREET

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VOL. XII.

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No. 6

A READING PROFESSION.

It is better to think much than to read much, but it is still better to do both. We knew a dentist who puzzled his brain for a month over what he believed to be a new method of introducing gold into a posterior approximal cavity, only to be shown by a confrere that it was old when Marshall Webb was young. How are new ideas propagated, if not through our literature and our clinics? The percentage of dentists who attend conventions is very small. How can the absent majority know the progress of events if they do not read?

The fact is, there are a large number in every profession who have either an innate dislike of professional literature, or who got such a dose of books in college days that, if they read at all, "they read to doubt or read to scorn." To read to learn is no gift, and

why sensible men throw aside the literature of their calling, or perhaps leave their journals unopened, can only be explained by the fact that they either purposely ignore them, or are too busy otherwise. Dentists, as a rule, have their noses close and constantly to the grindstone of daily toil. They must have diversion of thought and work. They have often fair excuses for neither reading nor writing; but the habit of neglect is strengthened by neglect, just as that of reading and writing becomes easy by practice. Men who imagine they only need to think and not to read are the men who discover mare's nests. We would have larger gatherings at our conventions if there were more reading in the profession.

DENTAL SOCIETY OF WESTERN CANADA.

We invite special attention to the meeting of the Western Canada Dental Society, to be held in Winnipeg July 20th and 21st. The Society is intended to embrace the profession from the Great Lakes to the Rocky Mountains. Our collaborateur, Dr. McInnis, has been thinking and working for a long time to attain the success of this new-born, and we trust that as many as possible of the more eastern dentists will make an effort to be at the meeting. Of course it is fully expected that every dentist between the Great Lakes and the Rockies will be present, and become members. The growth and the protection of the profession demand this.

Editorial Notes.

AN old and experienced dentist, going through the larger cities, made the following observations, which we take the liberty of publishing: "I notice that you have the same epidemic of assertion and presumption among a class of young practitioners with which we are afflicted in the States. Our colleges teach dentistry all right, perhaps. I guess they give the boys a great deal of good practical teaching, but it puzzles me to understand why they seem to succeed in giving them, too, a good deal more pure and un-

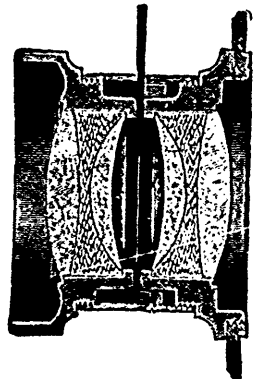
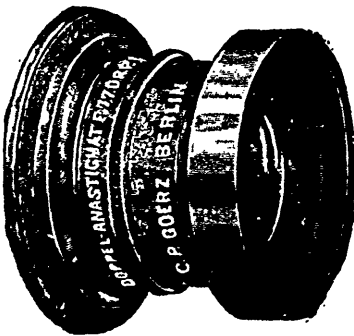
bridled 'gall' than the teaching bodies of any other profession. I stick up for our American colleges, and think they do not deserve hyper-criticism, of which they've got a good deal lately; but they are not above fair criticism. I think they fail in the effort to teach modesty, respect for experience, and square up-and-down truthfulness. Too many of our boys start out when they get out of college as if they were made of superior clay, and they talk, write and act as if experience was no advantage to a man, forgetting that they have no monopoly of the opportunity to keep up with the times and that they must naturally be absolutely destitute of any 'experience' at all! Well, some of the boys just let their youthful enthusiasm get the better of their modesty, and conclude that they know it all, and that even the men who taught them 'don't know beans.' I have many a good smile over the superciliousness of these boys, and always think of the saying, 'Young men *think* old men fools, but old men *know* young men are.' I've been greatly amused at the presumed infallibility of some of them. The athletic way with which they jump to a conclusion in diagnosis and treatment makes one's hair stand on end. However, we must let them have their professional 'jag.' They'll get sober—and wiser—by and by, when they, too, will have their fun at laughing at the presumption of young dentists of the future, who are at present, perhaps, living on their mother's milk."

IN connection with the above remarks, we think we may be justified in publishing one of several exemplifications of ingratitude and ethical violation on the part of a junior practitioner. We are not so unjust as to assume that the case is more than an exception. It is a pleasure to exchange ideas and experience with the younger generation. It keeps one fresh, even when the intensity of youthful "cock-sureness" plunges a young man into deep water. We learn from the errors of opinion and practice of others, as well as from our own; but we believe that all honorable practitioners, old and young, will agree with us that there is a sad lack of chivalry and even common sense in the conduct we relate.

A year ago a young beginner brought us a complicated case of irregularity, and asked us to lend him the literature of orthodontia. After a week he returned as bewildered as before, and to make a long story short, we constructed the entire apparatus for the case on the model, and spent a good deal of time instructing him how to insert it and how to proceed. Six months passed, and one day the mother of the patient brought the child to us, asking us to cement on two loose rings, as her dentist was absent from the city. She was not aware that we had suggested and made the entire apparatus, just as it stood. She patronizingly remarked that she supposed we had never seen just such a case; that it had been a rapid success so far, and that her dentist had told her that he had spent much time and thought over the case, and that the structure was an entirely new invention of his own! We left her with this belief. A few weeks ago, the same dentist brought us the models of a very difficult case of protrusion of the superior centrals, and asked for advice. "How did the other case succeed?" we inquired. "Oh! I tried your apparatus for a few weeks," he replied, "and it would not work, and I devised another arrangement after a good deal of thought, and it worked like a charm." "Did you abandon my apparatus?" "Oh! yes; it was only on a week." We may say that he was not aware that the mother and child had visited us, quite accidentally, as it happened, and that we had re-cemented *the only apparatus* which had been used! "Young man," we replied, "you are evidently one of the class who do not hesitate to lie as well as to steal. You lied to your patient, and you now lie to me, and instead of being a bit grateful for my services, for which I did not charge you a cent, you are an unscrupulous calumniator. An honorable man would give even the devil his due; get out!" He proffered apologies and attempted explanations. We would not accept the former nor listen to the latter. The story is not an isolated one. It is only one of many illustrations of the duplicity which the common quack keeps in stock. But it is deplorable to find a case among people who profess to be ethical, and who are as obsequious to one's face as they are treacherous to one's back.

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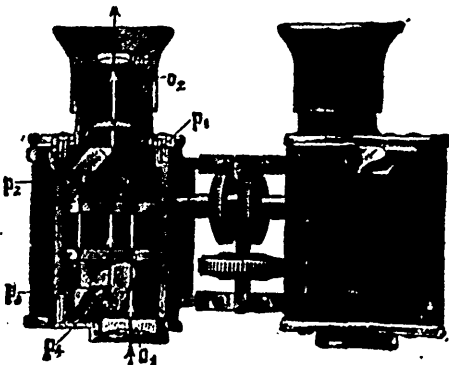
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WE have reason to know that the persistence of this journal in reference to quack advertising has been eminently successful. Its predecessor laid down ethical principles thirty years ago, from which its successor never deviated, and there have been men on the wrong side of the fence, as well as men on the fence, who were, by their own frank admissions, persuaded to act professionally. Few of the younger generations of dentists were born when the pioneers gathered together the discordant elements, and with much up-hill work, involving a great deal of sacrifice of time and money, succeeded in counteracting the prejudice of the press, the politicians, and the public. It is a very contemptible display of ignorance which attempts to-day to depreciate that work. We have had some positively venomous efforts in this direction, and some positively funny. That pioneers would be expected to create perfection out of chaos is too puerile a suggestion for any but the conceit of men, who think it was a mistake on the part of the Creator not to have established their personality before the beginning. It is so light a thing to sit in the easy chair of one's conceit, and show up the mistakes of one's predecessors, that Disraeli once remarked, that "the defects of great men are the consolation of the dunces."

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