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Original Communications

PYORRHEA ALVEOLARIS.

[The following is a synopsis of the discussion of the paper of Dr. Curtis, which appeared in our last issue.—ED. D. D. J.]

Dr. Curtis added the following remarks: Before the paper is discussed, I desire to present these inferior maxillæ, one denoting health, the other disease resulting from pyorrhœa alveolaris. You will see where the teeth once were, that the sockets and the bone around them, in fact nearly all of the alveolar process, is dead.

It is interesting to note the extent of the disease in this bone. At death the teeth belonging to this jaw were all in position, but when the soft tissue was removed the teeth fell out; while you will see that in the healthy maxillæ the teeth are all in position. This splint is one loaned me by Dr. Fish. You will see how accurately it is adjusted to the teeth, and how firmly it holds them in position. These micro-photographs are of fresh blood, and were made within a few seconds from the time the blood was drawn.

Photographs enable one to make a longer and more satisfactory study of each field, and because of the rapidity in which they were made, allow of a closer study of the normal blood, and also show changes as it degenerates. These photographs are made of unstained blood, and show accurately all there was in focus, and the dim outline of objects beyond. In some of these, a great variety of fibrin is seen. You will see that the serum of this blood, which was taken from a rheumatic patient, is found to be filled with fibrin. This is pathognomonic of rheumatism—the variety showing the character. In one of these photographs you will see uric acid crystals. This blood was also taken from a rheumatic

patient, but these crystals were not found until several hours after it had been drawn, and decomposition taken place, I had been unable to find uric acid crystals in the fresh blood.

I believe, in order to accurately study the blood, it should not be stained. In one of these photographs an arrowhead points to the tubercular baccilli. This blood was drawn from a tubercular subject. Dr. Watkins has frequently observed the baccilli in non-stained tuberculous blood, and has a number of photographs to verify this observation.

Fibrin, as a pathological condition is, comparatively speaking, a new proposition, and one on which later writings will treat more extensively.

Dr. FAXON—Perhaps the words of Dr. W. A. Allen, of Billings, Montana, would be appropriate here. He says: "For fifteen years, I have been collecting articles relating to this disease, and could the mass of contradictions and misconstrued terms be put before any intelligent dentist, he would go insane." I believe the uric acid diathesis is generally accepted by most writers on this subject—the only difference of opinion seems to be as to whether it is the primary cause of the deposits or a secondary influence to local manifestations. It seems to me of little import to dentists whether uric acid is the cause of gout or rheumatism, or the result, as Dr. Curtis states. The point that we have to consider is: Is uric acid a cause of deposits on the teeth, and how does it act in depositing? Is it, as Dr. Pierce, of Philadelphia, says, a plasma exudation from blood vessels freighted with salts, deposited near the apical extremity and working its way downward to the gingival margin of the gum? Or is it, as Dr. Cravens claims—and he pretends to have been successful in treating many cases—he claims the cause to be absolutely local, and that the aggravated cases are simply a sequence of the inflammation at the gingival margin. If we take Dr. Rhein's view, we will believe that all cases come from some specific disease in the system and that that disease must be cured before the pyorrhea alveolaris can be cured. If this is the case, then we, as dentists, must give up the treatment of pyorrhea alveolaris or take a thorough medical course before we attempt it. There is one point that I wish Dr. Curtis would make a little clearer, and that is, the relation of the constitutional to the local cause. He partially anticipated my remarks and told you of that in the diagrams that he passed around, but I do not understand fully the point where the two symptoms merge together and affect each other. Is the constitutional tendency ever the first cause of the deposit, before local irritation, or does the local cause progress to a certain extent before the constitutional cause exerts an influence? He says rheumatism, gout and syphilis are potent causes. Does he mean that pyorrhea alveolaris may exist absolutely

local, without any constitutional aggravation? He places special emphasis on ill-fitting regulating appliances, plates, etc. As regulating appliances are mostly used on young mouths, where I believe we seldom if ever come across a case of pyorrhea alveolaris, that, to my mind, cannot be a very common cause, although I believe in the effect of traumatic injury, and the degenerating effect which may result from it. In regard to the point of faulty articulation where teeth have been extracted, the disease from this cause has never happened in my practice, and in any mouths that I have seen that way I have never noticed the effect he speaks of. I know that personally I have seen cases of pyorrhea as common where the articulation appeared to be all right, as otherwise, particularly if the teeth were somewhat crowded.

Dr. Curtis speaks of any local condition which leads to degeneracy of tissue. Does the progress of degeneracy ever continue to the stage of pyorrhea from local influence, or does the constitutional influence come in and play a part, and how? These are vital points to me in deciding the necessity of constitutional treatment in a great majority of cases. If restoration to health is essential to the cure, and specific disease the primary cause of this malady, where does the disease go to in the case of extraction, where you get a direct healing without doing any more to the case? Have you seen any cases where you have been unsuccessful in the elimination of the disease, or where a cavity did not heal up nicely after the extraction of a tooth affected with pyorrhea? If I interpret Dr. Curtis's remarks correctly, he finds that there are three different classes of this trouble: first, the class in which the cause is wholly constitutional; second, the class in which the cause is wholly local; and third, the class where both are combined. And in that respect he would agree with most writers on the subject.

I am inclined to think, from the limited number of cases that I have handled, that true pyorrhea may be greatly aggravated by constitutional disturbance, and yet I believe that a large majority, if not all the cases, can be cured by the thorough removal of the deposit and proper treatment of the soft tissues. This is a very skilful and a very difficult operation, and I feel that it is the lack of thoroughness in this operation which is the greatest cause of the failures. One of the greatest impediments that I have found in aggravated cases in the treatment of this affliction is the double-pocket where you will go along down the side of the tooth and come to a sort of an obicular constriction and you think you have got to the bottom of the trouble, but to your surprise find that you keep on having an exudation of pus, and you won't know what it means, until finally you discover you have not gone deep enough. You then work up beyond this constriction and find that

you are in the true pus pocket. I think this is the greatest bother in treating this trouble that the dentist encounters. Dr. Cravens speaks of the galleries that connect these pockets and how easy it is to be deceived in them.

My opinion is not based on an intelligent and scientific investigation of this trouble, constitutionally, such as Dr. Curtis has made and as Dr. Rhein has made, the latter gentleman claiming that he can enter a hospital and select ten or more patients that are troubled with this malady and tell by the phase which it takes in the mouth the specific disease with which they are ill. I can only speak of it as I see it and treat it in my practice, and have attributed my failures to the lack of thorough treatment, for want of proper instruments, and unwillingness of the patient to allow the operation and to follow my directions in regard to care of the teeth.

Now, Dr. Curtis does not believe in the use of acids in the treatment of this malady, and I want to ask him why he objects to acids? Isn't his treatment a means to the same end? Doesn't he work with the same motive, to get a thoroughly aseptic condition and stimulation of the parts to healthy granulation?

In the treatment of this trouble I have been most successful in following out the course taken by Dr. Cravens, which is to thoroughly syringe out the cavities with hot distilled water at a heat of 140°. That is just this side of scalding the mouth, but it will not scald, although I use an absorbent cotton in the mouth to catch the water to prevent any discomfort to the patient. Then you make an application of cocain; and right here I would like Dr. Curtis to tell us how he prepares and uses the volasem, so that we may go home and use it, with his assurance that we have an antidote to whatever bad effects we may happen to get from the cocain. I think that is a valuable and essential thing to know. The cocain which Dr. Cravens uses is a saturated solution in chloroform, to which is added a few drops each of the oil of cloves, menthol and cassia. It makes about a ten per cent. solution, and the advantage is that it does not evaporate or grow stronger. After syringing out and using the cocain, you perform the operation of removing the deposits, applying a five per cent. solution of sulphuric acid. Dismiss the patient for five days, and then make an application of a ten per cent. solution of nitrate of silver. Dismiss the patient for five days more, then syringe out the pockets thoroughly with a solution of bromo-chloralum. The nitrate of silver and bromo-chloralum should not be used at the same sitting, as they would unite and a glassy precipitate would be the result, which would adhere with great tenacity to the teeth. If this does not prove effective it must be that you have not done the surgical treatment thoroughly, and at the point of failure the treatment

should be repeated. Of course my experience is limited, but in the cases where I have used it, the gums shrink beautifully under that treatment and come back to their natural color, and unless the alveolus is too far absorbed the result is satisfactory.

Dr. PIPER. - When in New York, some two weeks ago, I had the pleasure of calling upon Dr. Curtis at his house. As he was in the midst of a surgical operation he very kindly invited me into his operating room to witness the action of volacem as an antidote to cocain, both of which he had just administered. I was very much pleased with the results he was getting, both from the cocain and volacem. The pulse of the patient under operation was somewhat affected, as it naturally would be, but nothing alarming developed during the operation. The next day I witnessed his treatment of what was a severe case of pyorrhœa alveolaris; but now, as I saw it, was well on to recovery. I do not remember how long the case had been under his care, but from his and the patient's description, it seemed to me that what he had accomplished was quite remarkable.

The cause of pyorrhœa alveolaris has been under discussion by some of our best men since 1746, and in 1867 Magitot associated it with gout and rheumatism, considering it a very complex disease. From Magitot's close observation he thought its origin was to be found in other parts of the body besides the gums and teeth. Dr. Riggs, in a paper read before the American Academy Dental Surgery, in 1875, states that "This disease has nothing whatever to do with the system, but is due to accretions of whatever source derived. Purely local in its origin—the result of concretions near or under the free margin of the gums—the removal of which is followed by cure." Here we note that Dr. Riggs was one of the first to state positively that this disease could be cured.

Returning to Magitot, we find him making the statement that tartar is accidental and not the cause of this disease. And so we may go on reviewing the close observations of our best thinkers. One man says that it is wholly caused by concretion, or a secretion coming through the blood, working from the apex of the tooth to the gingival margin, while another claims that its origin is at, or near, the gingival margin, working down the side of the root, causing an irritation producing congestion, resulting in suppuration of the soft tissue down to the alveolar wall, causing an absorption or necrosis of the process and eventually loss of the tooth, when pyorrhœa alveolaris disappears. To-night we have heard from one of the latest workers, who states that pyorrhœa alveolaris is a symptom of a disease and not the disease itself. He believes the cause may be found in other parts of the body. Dr. Curtis states that, after the tooth is out, the alveolus should be well curetted. I cannot see the wisdom of doing this, as in my cases I have not

found this necessary for a healthy recovery of the parts involved. So far as removing all sources of irritation which he has spoken of, I concur. He says that most of us do not have the privilege of experimental work. This may be so, but I think our essayist is a trifle too charitable, and that it is more indisposition than privilege. If the disposition were good, plenty of material could be found.

In regard to general treatment again I agree with Dr. Curtis; but why do we not give attention to systemic treatment? I think the solution of this is very simple. Most of us are not sufficiently educated in the action of drugs and systemic symptoms to intelligently use the drugs and treat the symptoms. However, this may be obviated, in a measure, by close observation and a careful course in reading. I consider systemic treatment many times of great value to both patient and operator.

What is our relation to-day to the physician? Our essayist has said in his paper that the relation between the medical and dental profession is not what it should be. If we compare the relation to-day with what it was twenty-five years ago, we find no longer the doors closed to consultation with us. It has been my experience when a physician finds an obstinate case of facial neuralgia, one of the first things he does is to advise his patient to go to his dentist and have his teeth put in a thoroughly hygienic condition. On the other hand, when the dentist finds an obstinate case of neuralgia, he returns the compliment by sending the patient to the oculist, aurist or the nerve specialist. Our societies are thrown open to each other for a free and impartial discussion of complicated cases. Is not this in the line of advancement? Let us keep on and, as Dr. Curtis says, teach more medicine in our dental colleges and more dentistry in the medical college.

Some years ago I remember hearing it said, among the older dentists of Boston, that Dr. B. was very uncleanly in his habits with his patients and about his chair; when he grew so old that his patients distrusted him in his work and went elsewhere for the care of their teeth. Dr. C. says, "I have just been treating another of Dr. B.'s pyorrhea cases;" and I think it was confidentially believed that the disease in many of Dr. B.'s patients' mouths was transmitted, by his use of uncared for instruments, from one patient's mouth to another. This seems to be good evidence that the disease may be, and many times is, transmitted from one mouth to another.

Dr. Hart, of California, has advanced a good idea in saying that a mouth should be carefully studied for artistic prophylactic purposes. He removes all sharp corners, adjusts the articulation; and, in fact, makes it an ideal dentine, as much as it is in the power of man to do so.

Dr. Curtis speaks of the case in which he goes between the

tooth and the gingival margin. I wholly agree with Dr. Curtis in that the gingival margin should not be injured, and if so, should be healed as quickly as possible. Many of us have seen disastrous results follow the use of a surgical clamp. The temperament of the patient, in my experience, does not play a very important part in the disease, and as for pyorrhea being a symptom of some other malady I am not convinced that it is a fact.

Mr. D., a man of sedentary habits, a good liver, but not extravagant, weight about two hundred pounds, height about six feet, of lymphatic temperament, came to me some twelve years ago about discouraged with his teeth. I began treatment by thoroughly removing all deposits and the use of zinc chloride as a stimulant. This was kept up for two years, seeing patient every few months for treatment. The case progressed slowly, but still I was confident of making some progress with the exception of two teeth, about the roots of which the process was gone, leaving only soft tissue to hold them in place. Later on I saw the patient every two months, for several years pursuing the same treatment. First, removing all foreign deposits, douching with warm water, cauterizing with escharotics, and afterward stimulating. When H_2O_2 came into use, I soon adopted it, using the three strengths, three, five and twenty-five per cent. A little later I used the curette, with stimulating application and antiseptic wash for the patient's use. One day Mr. D. told me he was dieting for the purpose of reducing his flesh and from that time on the case improved rapidly, and after keeping this up for about a year he said to me one day, "Doctor, my mouth never felt so well as it does now." I asked him what he had been doing, and he replied, "Dieting, with plenty of exercise." I made a careful examination and found his mouth in good condition, with very little sign of pyorrhea. I made the remark to him that I thought I had succeeded in relieving him of this troublesome disease, but asked him to continue his visits as before.

Now this is a clinical case, and in twelve years this patient had only lost two teeth. I do believe that the local treatment had more to do with the successful outcome than the systemic, but also believe that the latter assisted. I am thoroughly convinced of one thing and that is to maintain absolute cleanliness in the mouth, and a healthy condition of the teeth and gums in this class of patients means an everlasting vigilance on the part of both patient and operator.

DR. EAMES—I have listened to the paper and to the discussion with a good deal of interest, but I am not prepared to take a leading part in the discussion, and I will, therefore, endeavor only to make some remarks on points as they come to me. I was especially interested in Dr. Faxon's remarks, and have often

thought of what has been written regarding the extraction of teeth and thus curing pyorrhea, but I do not agree with that idea at all. There is every evidence that the trouble continues; for instance, the form of disease that is accompanied by a large white soft deposit will, in many cases, extend to still other teeth after one tooth has been extracted. Should there be an artificial plate in the mouth you will often find this deposit covering portions of that; thus do the symptoms continue even after the teeth have been removed. Some operators are very skillful and perhaps remove all the deposit, but in such cases I don't see how the tooth is in any better condition than it was before any deposit took place. When the tooth was in its normal condition something started this deposit in the first place, and what is to prevent its recurring again from the same cause? I understand, not only from the paper but from others, that pyorrhea can be cured, and that gout, rheumatism and syphilis are potent causes. In that case we must first cure rheumatism, gout, or syphilis in order to cure the pyorrhea; or have we come to that state of knowledge by which we can remove the disease without removing the cause? That seems to dwell in my mind as an obstacle.

This subject claims a good deal of my attention, and for many years I have taken quite a complete history of cases, inquiring into local and constitutional symptoms, including the family history. In this way I hope, with others, to throw some light upon the more remote etiological factors in so-called pyorrhea alveolari. One remark made here to-night caught my attention, it was: "She had no rheumatism." I do not take it for granted that the patient had no rheumatism because she said she had not. A physician, capable of making a microscopical examination of the blood and excretions, might decide that there was a rheumatic diathesis present and the patient not know it. Regarding the statement that uric acid is the cause of pyorrhea alveolaris, I have always understood it to be one of the symptoms accompanying certain forms of this disease, but what the primal cause of it is, I think we are yet in the dark, therefore, I must say I am unable to remove the cause or cure the disease in these cases.

DR. HARRIMAN—The treatment that I use is different from any that has been mentioned from the fact that, in addition to the sulphuric acid treatment, I use pure carbolic acid. In the first place, I thoroughly cleanse the teeth of all deposits as far as I can—I can't do it all at one sitting, it sometimes takes three or four. Then I take a long fine needle, wind it with cotton, dip it into sulphuric acid and put it up into these pockets. Then I give them a full, solid treatment of carbolic acid in the same way.

DR. FORBES—I believe the cause is largely due to the patient's excesses and lack of care of the teeth. Even in cases where the

patient is apparently very healthy, I believe it can usually be traced to some excess; and, as far as the treatment of the disease is concerned, I have met with varying success, some have been pleasing to me, and others very discouraging indeed. I believe it starts as a local irritation caused perhaps by imperfect plates or fillings or clamps around the teeth, or perhaps abscessed teeth; and the great trouble I have found in the treatment of these cases has been the co-operation of the patient. It is very aggravating when you are doing all you can to find that they will not do as they are told, and usually the different times that you see them the food is there and you have to remove it, and go over about the same ground that you did in the first place, with the exception of the removal of the deposits. I think we all have to go through this discouraging experience—the inattention which patients give to the teeth—and that is one reason why we are not more successful in obtaining results from our treatment of pyorrhea alveolaris. I have said I believe the original cause to be some local irritation and I think a great many times that merely the extraction of one or more teeth where it begins will prevent it from extending to other teeth, of course I am referring to the posterior teeth. I would not advise the the extraction of any of the anterior teeth. We see teeth affected with pyorrhea in which we find dead pulps, and in treating those we get some very good results after the pulps are removed and the canals thoroughly cleansed and filled. I also believe there is a chance of improving the conditions by removing rough fillings and putting in fillings that are properly contoured. Loose teeth can be assisted by putting on partial caps and connecting them with some other tooth for support. While I believe in the local origin of pyorrhea alveolaris, I do not believe that pyorrhea can be cured while certain constitutional troubles exist. I believe it can be helped, but I do not believe there is a thorough cure for it, and I also believe the reverse of this to be true, that is, that certain diseases cannot be cured while pyorrhea exists. I was very glad to hear in Dr. Curtis's paper his criticism of the physician who was unsuccessful in treating a stomach trouble of a patient, who was also afflicted with pyorrhea. The patient whose teeth are affected with pyorrhea alveolaris also suffers from stomach trouble, and when such a patient goes to a physician he listens to their story, looks at the tongue, and without further examination writes off a prescription for nux vomica and gentian, or something of that sort, and never thinks anything about the teeth. The teeth are still in that condition, with pus exuding, and the patient continues to swallow that infected saliva, and of course the cause of the stomach trouble is not removed. As long as they are taking a stimulant they feel a little better, but they are not cured, and the physician wonders why. They never think of sending the patient

to the dentist to have the teeth treated. In what appear to be chronic cases, I believe all local causes ought to be removed before the physician can accomplish much with systemic treatment. If he finds that a case of stomach trouble, or some trouble about the head, does not respond readily to his treatment, he should send them to a dentist to see if there is anything to be done, and then go ahead with his systemic treatment.

DR. RICE—I do not see any reason why we may not hope to relieve this local trouble to a very great extent, even if the constitutional symptoms do exist, as we might in any other disease, but it is not likely that we shall effect a permanent cure while the constitutional symptoms are still present. In some cases pyorrhea alveolaris is the sequence, I think, of constitutional trouble. The constitutional trouble may be a thing of the past, and a permanent cure of mild cases of pyorrhea could probably be very readily accomplished. Dr. Curtis and Dr. Forbes have spoken of the lack of knowledge on the part of physicians about diseases of the teeth, and I think we all have had patients who have been under treatment with some physician for dyspepsia, or antrum trouble, or some affection of the eye, the ear, or the nose, when the real cause lay in some diseased tooth or some of the tissues surrounding the teeth.

DR. CURTIS—I am pleased with the discussion of my paper, the practical side of which seems to have elicited your chief attention. I regret that Dr. Andrews and others who were to discuss this are not present, as they might have taken up the subject of the blood.

We all seem to be working for the same end, and it matters not by what methods—so we accomplish it.

This disease apparently originates from both local and constitutional causes. I have seen it precede, by several months, a severe rheumatic attack, and have observed it in patients who have been treated for syphilis and were apparently cured.

Salivary calculi as an irritating cause is not always present. Constitutional as well as local causes should always be looked for. Patients, for obvious reasons, are not always to be depended upon for an authentic account of the history of their case. They may not know of the existence of certain diseases. The examination of the blood, therefore, seems to be the only trustworthy method for arriving at definite conclusions. I have observed, in many cases of patients having had syphilis, an egg-skin scar on the mucous membrane, running along the ramus and buccal surface of the molars. The nose and throat reveal similar signs.

I recently saw an exaggerated case of pyorrhea alveolaris, the attributing cause of which I believed to be syphilis, the patient stoutly denied having contracted. The examination of his blood proved his statement to be false, and I told him so. He then

acknowledged that several years ago he contracted the disease and that his physician declared this had been eradicated from his system. A peculiar feature in this case is that within the past two years, a growth appeared on the buccal and labial surface of the alveolar process of the upper jaw. The mucous membrane covering it was highly inflamed. The growth is dense, like an exostosis. It is about as wide and the size of my little finger. It has the appearance of being external to the periosteum. Whether this is the direct result of syphilis or iodism, is a question. An impression, taken five months previous to my seeing it, shows that the growth is progressive. All the upper teeth were extremely loose. There was no calcarious deposit around them. They rested in a mass of ulcerated tissue, the sockets having been completely destroyed. This patient has again placed himself under syphletic treatment. In such cases as these the dentist and the physician should work together. The local causes which I have mentioned I believe can be wholly responsible for some cases of pyorrhea alveolaris. Astitis may lead to caries and necrosis and purulent conditions. Heredity plays an important part in these cases. Where there is a family tendency to this disease, the greatest care should be exercised to keep the system free from the constitutional cause as well as to prevent local irritation. That occlusion resulting in pericementitis may result in suppurative inflammation, or may be responsible for diseased gums failing to heal. These cases are, I think, often mistaken for pyorrhea alveolaris.

Some time ago a dentist sent me a case in which but four of her twenty teeth occluded. These were extremely loose. I speak of this to show that dentists as well as physicians are liable to overlook important matters of this kind. The patient was unable to masticate food, and because of this and the extreme pyorrhic condition, was in very delicate health. The canals of several of her teeth were septic, and her mouth was bathed in pus. She had long suffered from blood-poisoning. As you can readily understand, more than local treatment is required in such cases as these. One year later her dentist reported that she was quite restored to health.

Rheumatism is generally present in these cases, and should have treatment to eradicate, as far as possible, the disease. There are, perhaps, as many symptoms as there are varieties of rheumatism, and applying these in time, an attack can be prevented.

Preventive medicine is my idea of practice. The first step to consider in the treatment of this disease is, I believe, to avoid the conditions which produced it. Temperate habits, and the avoidance of all acids are essential—by acids, I mean in food as well as in medicine: such as vinegar, strawberries, lemons, tomatoes,

grapes, and sour wines. From two to four quarts of water daily, ten hours of sleep a day, all the sunshine possible, vigorous exercise, electric sepsir or massage, hepatic stimulants, frequent feeding, and one-half to an ounce of alcohol daily, according to the enfeebled condition of patient. Avoid mineral medicine. When much fibrin is present in the blood, there is imminent danger of an attack of rheumatism. After treatment of these cases is completed, a lasting benefit may be derived by living some months near to nature in a dry and wooded country.

The object of curetting the socket is to remove the diseased tissue, thus preventing cheesy deposit and subsequent disease. Failure to do this frequently results in the continuation, or reproduction of the disease in that locality. I believe this should be done, even following the extraction of abscessed teeth. Abscess sacs remaining in the jaw frequently produce disease of it. This is a potent cause of cystic tumors.

Double pockets, by my method of operating, would be found and removed. Diseased piridental membrane should be removed the same as other ulcerated tissue. My objection to the acid treatment is, that it is superficial in its work. It does not sufficiently destroy the diseased tissue, and does destroy healthy tissue which should be protected. Few succeed in getting good results from this method. It is dangerous in the hands of the unskilled.

The pyorrhic case referred to by Dr. Piper, was an extensive one. I advised the extraction of the extremely loose teeth, to which the patient objected. His dentist secured them by ligatures. I advised his dentist to employ the Fish Splint; if this is not done, the ligatures will soon extract the teeth. The case was in my hands about three weeks and was dismissed cured.

I object to the use of chloride and sulphate of zinc treatment, on the same ground as I do the acid treatment. I have seen admirable results follow the use of these powerful escherotics in my early practice. I believe this is Dr. J. N. Farrar's favorite treatment of this disease, and he reports excellent results. I think he has reported in some of his articles the treatment of an average of fifty pockets a day. This treatment is necessarily slower than the surgical treatment.

If the pus is responsible for the calcarious deposit around the roots of the teeth, it should be destroyed as speedily as possible. And as the ulcerated tissue is filled with pus, why not remove it *in toto*?

My only object in using peroxide of hydrogen is for its effervescent and hemostatic effect. It boils out the loose debris remaining in the freshly curetting pocket. I rarely treat a pocket more than five times. The American system of dentistry speaks of this disease as *loculosis*—it is the American name. The French call

it pyorrhœa alveolaris. I find it impossible to always prevent severing the gum between the teeth. There should be as little injury to the healthy tissue as possible. The habits and the excesses of the patient are important considerations, and are often difficult to control.

DR. PIPER—Will Dr. Curtis tell us what volasene is and where it can be procured?

DR. CURTIS—It is prepared by the Volasene Co., New York City. It is a proprietary article. I cannot tell you its combination. When I asked the same question, I was told it was made of "things and things." On general principles, I avoid proprietary preparations. Were we to know the formula, it is doubtful whether we could compound it so as to get the same results. Pharmacists tell me that they cannot get results claimed from preparations made from the printed formulæ.

Like others, I use some proprietary medicines, such as aristol, phenacetine and sulphonal. Who among us know their exact composition? Volasem is an absolute antidote to cocain, at least this is my experience in the use of it. Its action must be to stimulate the respiratory and cardiac functions, thus fortifying them against the depressing influence of cocain.

When the stronger or saturated solution of cocain is employed, I am in the habit of giving about ten drops of volasem. I see no bad results from the use of cocain in any strength when volasem in sufficient quantity is first used. It should be given immediately in advance of the application of cocain. I use cocain as freely hypodermically as I do externally, and it is a pleasure to operate with this antidote available. During a single operation, with repeated injections of cocain, I have given the patient as high as thirty drops of volasem. Should any untoward symptoms be observed, more volasem should be given. In antrum operations, such as Dr. Piper referred to, I inject the cocain into the soft tissue, over the bone through which I am to drill, and when the antrum is open I flush it with a strong solution of cocain, and repeat it if necessary, to allow thorough curetting.

A MEMBER—Suppose you have had bad results from volasem, what would be the antidote?

DR. CURTIS—On the ground that volasem is an antidote to cocain, I would expect that cocain would antidote volasem.

DR. EAMES—What are the physiological symptoms of volasem? Are they similar to those produced by nitrite of amyl, nitroglycerine and other heart stimulants?

DR. CURTIS—I have observed nothing to indicate its physiological action. I have given to different patients one and one-half drachms of volasem in twelve hours, and failed to note any physiological signs favorable or unfavorable to its respiratory and cardiac

action. It appears to neutralize the general action of cocain. In the November *Cosmos* I reported a case where a saturated solution of cocain was injected without the use of volasem. This was followed by very alarming symptoms. Ten drops of volasem were then administered, and in two minutes the patient was conscious and entirely restored.

DR. FAXON—How is volasem used?

DR. CURTIS—It is diluted in a teaspoonful, or less, of water, and taken by mouth. Should the patient be unable to swallow, I would inject it. Since volasem has been in use, I have done fully 95 per cent. of my operations under cocain.

SHALL WE ENDURE OR CURE ?

An immense amount of money has been, or is being spent in Canada to educate dental students and practicing dentists. There is indeed much to encourage us, when we contrast the present with the past. In Ontario, especially, the organization of college and associative facilities is as near perfection as has been reached anywhere else in the world.

On the other hand, two new and increasing evils stare us in the face. Competition has cut down the fees fully one-half from what they were thirty years ago, and we have added to our list of professional calamities the curse of the quack or quack-imitator advertiser. Both of these evils exist because of excessive competition. The public is more intelligent and much richer in every part of Canada than it was thirty years ago. There is every good reason why our services should be worth more to the public than they were thirty years ago. The services on the average are better. With the exception of the degeneracy which has followed the introduction of vulcanite, there has been very marked progress. But competition has brought into our ranks not only the purely commercial instinct, but an accompaniment of trickery and falsehood, which we see displayed in vulgar advertisements.

The point we wish to make is this:—An immense amount of money has been spent in the interest of the profession; is it not time that a good share should be spent in that of the public? The quack advertiser publicly proclaims that he has no self respect left. He has not the satisfaction of feeling he has mortgaged it. He knows he has irretrievably lost it, as he is determined to go to the devil unethically in a blaze of boasting. The public gets its education and knowledge of dentistry from this rascal's advertising. We know he is a liar and a fraud, but the people who believe in the catch-penny traps of the departmental stores, and who

superstitiously swear by everything they read in the press, do not know what we know. We cannot counteract the quack's methods by excelling him in falsehood. In fact, individually, we can do little or nothing. Individually, we could catch the credulous only by a further cut in fees. But, as we have reiterated a score of times, the only effective action can be made by the recognized and responsible stewards of the profession speaking *ex cathedra* and in a sensational honesty in regular advertisements. The pulpit does not think it demeaning to be "sensational" in its titles of texts. Truth told fearlessly may be told "sensationally." A few hundreds of dollars spent in advertising in the public press, under the authority of the official mouthpiece of the profession, a warning against these quack advertisers, would effect more reform in six months than ten years of writing in this JOURNAL, or all the ethical codes every society in the Dominion could enact. Public Boards of Health in this way warn us against sanitary sins. The Church holds that if we were not preached to a hundred times a year, and warned of the evils of the world, the flesh and the devil, that we'd be lost. Society as a rule accepts the belief. We are anxious in every way to have our ignorance enlightened. In respect to the mischief being done to the public by the wiles of the Cheap John in dentistry, how is the public to get enlightenment, if not by the elected authorities of the profession? Money devoted to regular and reiterated advertising in this way could not fail to waken serious public attention. It wants some live men in each province to take up and force the proposition to a practical issue.

"Supposing two motions were brought forward: one to pay for the DOMINION DENTAL JOURNAL free to every licentiate; the other to vote the same amount of money to publicly advertising the suggestions you propose. And supposing it was decided that only one of these motions should carry, what would be the advice of the JOURNAL?" The above comes from a valued friend in Ontario whom we have consulted repeatedly. We are authorized by the publisher of the DOMINION DENTAL JOURNAL to say, that as he has never in any instance interfered with our free hand as editor, he will not in this matter, and that he is ready to second anything for the general good of the profession. The answer of the DOMINION DENTAL JOURNAL is this—*give the preference to the profession*. The JOURNAL, and everybody connected with it, is ready to make sacrifices, if necessary, to expose the impostures which are doing so much throughout the Dominion to lower the respectability and prosperity of the profession. Who will take the bull by the horns?

MR. S. A. CRAIGE.



The commercial side of dentistry has no parallel in any other profession. We are, more than any other, dependent upon manufacturers, and anyone looking over the advertising pages of this journal will have to admit, that the White's, Justi's, Sibley's, Johnson & Lund, Ash, Buffalo M'fg Co., etc., cater to us with great enterprise and satisfaction. The Canadian trade has increased immensely; there is a greater demand on the part of the very large majority of the profession for the best of everything that can be bought. Even the pretentious "real painless" prevaricator feels that, in lieu of personal skill and honesty, it will pay him to back up his gall

with showy stock and apparatus—which he generally tells his patients are his own invention. The dependence of the profession upon the dental drummer would seem to be curtailed on account of the existence of the local depots, but the subject of these remarks is as welcome a visitor there as he is in our offices.

Mr. S. A. Craige was born for a dental drummer as surely as Shakespeare was born for a poet. He has been in connection with the S. S. White Company for somewhat over a quarter of a century, and during that time has travelled through Canada a great deal, enlightening the uninitiated, relieving puzzled practitioners of many a temptation to profanity at the mysteries of mechanical disruptions in engines, chains, etc.—expatiating on the excellence of the S. S. W. tooth, without ever once saying even a depreciatory word against those of their rivals. Mr. Craige has displayed the generosity of a fine genius in his methods of doing business. He has shown that the abuse of a rival is not necessary to success; and that while anxious to do all the business he can for his employers, that he can do a constant work as an educationalist in his own line. Most of us who have dealings with him, have been under many obligations to his unfailing courtesy.

Translations

Edited by Carl E. Klotz, L.D.S., St. Catharines, Ont.

FROM GERMAN DENTAL JOURNALS.**THE DECIDUOUS TEETH AND THE SIXTH YEAR MOLARS—DISASTROUS RESULTS
FROM NEGLECT AND THEIR TREATMENT.**

(Continued from page 26.)

THE SIXTH YEAR MOLARS.—Having recognized the utility of the strictest attention paid to the deciduous teeth, much more reason have we to watch the first molars. The first or sixth year molars, which belong to the second dentition, are the supplementary part of the first, as they erupt just prior to the shedding of the latter, and have a very uncertain destiny. Irrespective of the fact that they very early fall a prey to caries, causing their rapid destruction. They have the misfortune to be mistaken for milk teeth, and in consequence are neglected by the parents. If parents were aware that these teeth were permanent teeth and constitute the abutments of the second dentition, and were cognizant of the importance of their preservation, these teeth would not be neglected and parents would place their children under our care before it is too late. Have we not all had the above experience? How frequently are children of 7 to 8 and 10 years of age brought to our offices to have these teeth extracted, and how surprised the parents are when we tell them that these are permanent teeth. When a child comes to us with one or more of these teeth decayed, we find about two-thirds of the tooth gone and the dentine softened to the pulp. In most cases the child has suffered and naturally seeks relief. Extracting would certainly be the quickest way, but what would be the consequence? Very likely when the sixth year molars are badly broken down, the milk teeth will be found to be in the same state, and if one is extracted the others must also be. And then what is left for the child with which to masticate its food? It is our duty to preserve the first molars and retain them, if not permanently, then at least till the premolars are replaced by the bicuspid. After the eruption of the bicuspid it is found that the first molars cannot be saved, then it is advisable to extract them, for when the second molar makes its appearance it will be found that it has taken the place of the first, and very little space, if any, left between it and the second bicuspid; whereas, if the first molar is extracted after the second has erupted, the space will never be completely closed, and it will be found that the second molar has tilted forward and occluding only with the distal cusp,

thereby losing the grinding surface. We must therefore proceed carefully and intelligently, so that the child that is entrusted to our care will receive the full benefit of our science.

As to the treatment of these teeth I now only refer to the third and fourth group. Teeth affected with caries of the first and second group can be filled immediately. In the treatment of the third group, I carefully remove the softened dentine, which enables me under favorable circumstances to apply a quick acting arsenious paste. If it is a crown cavity I allow the application to remain forty-eight hours; if in an approximate cavity and close to the neck of the tooth, I remove it after twenty-four hours and excavate the pulp chamber and again apply the devitalizer, which I leave in for several days. After this I enlarge the opening of the canals, remove nerve and dress canals with carbolic acid and leave it for a few days. The carbolic acid dressing is now removed and canals filled with gutta percha dipped into tinct. encalyptus. I am very careful in filling the canals so as not to force any of the filling material through the opening at the apex, for at the age of eight or ten years the opening at the apex is still large, and any substance forced beyond this might cause serious complications. The cavity is filled forty-eight hours later—this time is sufficient to ensure success. Should periodontitis occur it will be immediately after the root filling.

My treatment of caries of the fourth group with abscess or fistula consists of antiseptic treatment till the canals and teeth are thoroughly cleaned and free from all septic matter. The cavity and canals are prepared in the same manner as the above third group. The canals are filled as soon as every trace of inflammation is gone. In cases where I have doubts of success, I place an antiseptic dressing into the canals and fill the cavity with gutta percha. This temporary filling I leave for several months and then fill permanently. Whenever possible, I use the rubber dam in the foregoing treatments, also never remove a temporary filling before adjusting it. When I cannot use the rubber dam I use napkins, lint or sponge, but am always very careful not to get any saliva into the canals.

I should have very much liked to enlarge on the foregoing and have spoken about the manifold diseases of children, their results and their connection with dentistry, but as we are so seldom consulted about diseases of children I confined my remarks to caries.—M. DUCOURNAU, in *Zahnarztliches Wochenblatt*.

Medical Department

Edited by A. H. Beers, M.D., C.M., D.D.S., L.D.S., Montreal, Que.

THE RELATION BETWEEN DENTAL AND DENTO-AUDITORY AFFECT'ONS.

M. A. Pont (*Lyon Medical*, October 23rd) sums up a paper on this subject as follows: 1. Certain ocular and auditory troubles may supervene from many causes—operations on the teeth (extraction, insertion of a crown, etc.), the eruption of the temporary or permanent teeth, dental affections (periostitis, pulpitis simple caries). 2. The most frequent ocular troubles are conjunctivitis, keratitis, dacryocystitis, blepharospasm, or even blindness. 3. Auditory troubles, particularly frequent in affections of the teeth of the inferior maxilla, are pain, buzzing in the ears, hyperesthesia of hearing, or deafness. 4. These complications, when due to pulpitis or periostitis, disappear usually after the cure or extraction of the affected tooth, provided the intervention shall have been early enough.—*N. Y. Med. Journal*, December 3rd, 1898.

CORYZA, APPARENTLY OF DENTAL ORIGIN.

Mr. E. P. Collett (*London Lancet*, January 1st; *Journal of Ophthalmology, Otology, and Laryngology*, July) records the case of a physician who suffered from persistent coryza, principally unilateral, for three or four weeks. Examination demonstrated no physical cause except some stigmata on the middle turbinated bone, associated with general vasomotor dilatation of membrane. Neuralgic pain in temple, malar bone, and subsequently behind right ear, supervened. Local treatment proved of no avail. The writer found a periodontitis of the first maxillary premolar, which he extracted—no pus was evacuated. The neuralgia was cured next day and the coryza in three days.—*N. Y. Med. Journal*, December 3rd, 1898.

THE ETHICS OF LOW FEES.—To take a small fee, says the *Indian Medical Record* for October 1st, because the patient cannot afford a large one, is to act up to the true principle of the profession and to keep up, in its strict form, the honorarium which the fee professes to be. To charge a low fee in order to attract practice is a suicidal policy. It degrades the practitioner who does it to the level of a huckster, and it pauperizes the person to whom the charge is made, and leads him to put a purely commercial estimate upon the services rendered.

Abstracts

Edited by G. S. MARTIN, D.D.S., L.D.S., Toronto Junction, Ont.

DELICACY OF MANIPULATION.—Delicacy of manipulation! What is it? How acquired and how lost, are among the points we shall consider. A delicate touch is a touch soft and easy, yet firm and steady. It is an intelligent touch which speaks louder than words, and says to the patient in the chair, "These hands understand their work." It says to the frightened, nervous woman, "You have no reason to fear." It dries the tears of the nervous child, brings relief to old and young, and gives joy both to the sufferer and to the possessor. We hardly touch a patient when at once he forms some opinion of our skill as an operator. Those are mistaken who think that nimble fingers with loose joints are the ones most apt to produce this delicate touch. The fingers should not fly like so many sticks hung on hinges, but should have a rapid, easy and graceful action. This valuable motion and touch can only be acquired by working with the head as well as with the hands. The operator who thinks of a dozen things aside from his operations will never acquire the skill he ought to have. The whole mind must be concentrated upon the operation, and should work more actively than the fingers, planning ahead what the fingers ought to do.—*Items of Interest.*

J. E. REGMAN, in *Dental Review*, gives the following method of making platinum solder for porcelain workers, the use of which dissipates all danger of unsoldering the parts of the metal structure in the facing of the porcelain compound. For 20 per cent solder take platinum, six grains; gold, 24 grains; 30 per cent platinum, 9 grains; gold, 21 grains, etc. The platinum should be rolled out in as thin a ribbon as possible, and about one-eighth inch in width. The pure gold is melted in a globule, and the platinum ribbon fed into it; after that has been done the mass resulting should be rolled out as thin as possible, cut into ribbons, and remelted as before; this repetition of the first melting process insures an even distribution of the platinum through the mass; it is then rolled down to about ga. 34, properly marked and it is ready for use. A knapp blow-pipe will be necessary for the manufacture and use of the platinum solders, the gas blow-pipe being insufficient for anything above 10 per cent.—*Dental Record.*

SEPARATING IMPRESSION AND MODEL.—(*American Dental Weekly.*) Dr. J. A. Robinson, Morrisville, Vt., says: I was taught, after the model was hard, to whittle away the impression and

leave the model untouched by the knife. If possible I now drop the model and impression into hot water for a minute or two after which they will separate without the least trouble, leaving the model much smoother than if whittled out. Another, and perhaps a more important result of this method of separating impression from model, is being able to make another model in the same impression, for in nearly every instance, especially if a trifle larger tray has been used, the impression will come off in such large pieces that they may very easily be placed back into the same tray, fastened there with a little wax and another model made.—*Dental Office and Laboratory.*

A NON-SECRET OBTUNDENT.—Dr. Clyde Payne writes in the *Items of Interest* describing an obtundent of sensitive dentine used by him. "I make a saturate solution of carbonate of potassium and glycerine, then I make a saturate solution of cocain and carbolic acid, and mix the two together on a warm glass slab. I then proceed as follows: Apply the rubber dam, dry the cavity out thoroughly with alcohol and a continuous blast of hot air. Then apply a drop of the obtundent, and again apply the hot-air blast as warm as the patient can endure comfortably, continuing it for five minutes, at the end of which time the tooth may be excavated quite harmlessly. This combination gives a much better average result than I can obtain with cataphoresis."

HOW TO MANIPULATE AMALGAM AND CEMENT.—(J. T. Codman, *International*.) Having the cavity prepared, the walls are lined with a sticky mixture of cement, taking care that it fastens itself well to the tooth. A soft mixture of oxyphosphate and amalgam, not too closely intermingled, and which will be sufficiently adhesive to stick well to the first filling, is then added; lastly, the whole is covered with clean amalgam, which will adhere firmly to the second mixture and make a cover to it that will keep out all moisture and preserve the under fillings indefinitely. The materials can all be mixed at one time, the amalgam first, and the operation is not at all difficult to perform.—*Ohio Dental Journal.*

OIL of cloves for general use in the treatment of pulpless teeth is certainly one of the best agents at command. It possesses the property of destroying, or rendering inert, septic and infectious material. In cases of apical pericementitis it is perhaps the best agent that can be used. It possesses local anesthetic properties in a marked degree, and, like some of the other agents because of this fact, serves to reduce the inflammation in the tissues in the apical space, and causes them to return to a normal healthy condition.—DR. PECK, in *January Cosmos.*

I WANT to reiterate what I said at Albany, last May, which is: that nothing has come to the dental profession in the last twenty-five years that has done so much damage as crown and bridge-work. The young men have been led to believe that they could save more teeth in that way than any other, particularly when busy and pressed for time. The result is a dropping off of the large gold on master operations, and eventually the elimination from their practice of that skill which is necessary for the making of a proper gold filling. DR. VAN WOERT, in *Cosmos*.

TO ALLAY PAIN AFTER TOOTH EXTRACTION.—(A. Sheuer, *Dental Record*.) For the last five years, after every extraction followed by pain, I have wiped out the alveolus with concentrated carbolic acid. For this purpose I wrap a little cotton wool round the points of a pair of curved tweezers, dip it in acid, carbol. c. p. and wipe out every alveolus properly. The success is almost complete, and pain having lasted for hours is instantly allayed. The patient should rinse the mouth immediately after the alveolus has been wiped out.—*Ohio Dental Journal*.

A SUGGESTION ABOUT BACKING TEETH.—(Dr. Holland, *Items of Interest*.) If you will let me back the teeth, you may let whoever pleases do the soldering, and I warrant you there will be no cracking. The trouble is, that some practitioners take hold of the pins too near the backing, thus laying too much strain on the porcelain. If in bending the pins they took hold of them nearer the ends they would have less cracked porcelain.—*Ohio Dental Journal*.

IN setting crowns, Dr. Evans endeavors to so place them that in the event of any necessity for their removal it may be done without breaking the crown. This is done by first painting the crown-post with chloropercha, after first warming it. After trying in the crown the pin is again painted with the chloropercha. Then the crown is set with zinc phosphate cement in the usual way.—*Cosmos*.

SWAGING ALUMINUM.—(L. P. Haskell, *Dental Brief*.) Instead of using the mallet on the palatal surface roll a wad of wet paper and use it as a half-counter, the surface is then not marred. Lay a piece of rubber-dam over the surface in finishing the swaging. It is better not to anneal aluminum; it does not need it.—*Ohio Dental Journal*.

NICKEL FOR REGULATING-APPLIANCE NUTS.—Nickel cut from a "five-cent piece" is very satisfactory for making "nuts" for regulating appliances.—DR. WESELS, *Office and Laboratory*.

MIXING-SLAB FOR CEMENT.—Dr. Geo. Evans uses a square bottle as a mixing-slab, holding it by the neck and using the side as a slab. The bottle is filled with water, in summer using ice water, and thus the setting, the zinc phosphate, may be retarded sufficiently.—*January Cosmos.*

Selections

FORMAGEN.*

BY H. R. F. BROOKS, L.D.S.

In introducing the topic of formagen to your notice this morning, my object is rather to provoke a discussion which shall elicit the experience and views of others, than to read an exhaustive treatise. In our daily practice we have continually brought to our notice new drugs and reagents of various kinds (particularly in the region of antiseptics); many of them are of doubtful utility, but some are entitled to more than passing notice. In this latter category formagen is worthy of occupying a prominent place. Most of us here present have probably made use of it, but, as Dr. Abraham has unfortunately introduced it as a "secret remedy," there are probably some who are not acquainted with its constitution, properties and mode of action, and I may be forgiven if I digress briefly from the more practical side of the subject.

Formagen consists of a powder—principally calcium carbonate (which apparently acts merely as a medium)—and a liquid—carbolic acid and eugenol—each saturated, it is claimed, with formaldehyde vapor, which is gradually given off again when the two are mixed together. Formaldehyde, or to speak more correctly, formic aldehyde (CH_2O), is a pungent gas produced by the imperfect oxidation of methyl alcohol, depriving the latter of two atoms of hydrogen. It is a powerful coagulant and germicide. In a 40 per cent. (the highest practicable) aqueous solution, and known as formalin, it has been much used in medicine; it is especially valuable to the histologist and pathologist for the hardening of soft tissues, which it effects without cellular contraction. Having already found it serviceable for this latter purpose, I was induced, by a suggestion of Lepkowski, to try it in pulp treatment. My trial extended to two cases only (both of acute inflammation), and

* Read at the Annual Meeting of the Central Counties' Branch, July 2nd, 1898.

both, I am sorry to say, were entire failures. In the first I used the 40 per cent. solution as recommended, filling over with temporary gutta-percha, but the pain caused was so intense that, in the course of an hour or two, I reluctantly removed the dressing and treated with arsenious acid. Thinking that pressure might account for the pain in this case, a few days after, in a similar one, I mixed a weaker solution with the powder of Fletcher's artificial dentine. This I applied, carefully capping with ferrotype, and filling with oxyphosphate. The result was the same as before, and I agreed with my patient that it was not altogether a success. The forbearance of those coming under our care is proverbial, but I did not tempt human nature further.

Having at the time a prejudice against coagulants in root treatment, I did not use it in this direction, except, as I mentioned in a paper read before the Branch eighteen months or so ago, for the purpose of mummifying dead pulps. The results may be considered to have been satisfactory, as no trouble followed, but the system did not commend itself to me. My failures with formalin made me very sceptical as to formagen, and I did not try it when first introduced. It was perhaps as well, because in the earlier samples the percentage of formaldehyde was, I believe, greater than now, and the trouble I had before experienced might possibly have been repeated. In formagen, as we get it to-day, it is not easy to discover any trace of formaldehyde at all. Mr. Colyer gave expression to this in a paper recently read before the Odontological Society. My own experience goes to show that it is quite possible to demonstrate its presence in reasonably fresh samples, and under conditions that obtain in the mouth.

At the present time any definite statement upon the permanence of the results obtained with formagen would be manifestly impossible, but it will probably be conceded by all who have given it a fair trial that it is a preparation of very considerable value. After a trial extending over about twelve months, I confess that I should be very sorry not to include formagen, or some similar reagent, in my armamentarium. Since I undertook to open a discussion upon it, I have drawn upon my journal, and have tabulated 79 cases in which I have employed Abraham's preparation, discarding those I was unable to trace, or which were too recent to pronounce an opinion upon. Of these 79, 56 were, as I shall explain later, treated experimentally, that is, dressed with formagen, filled temporarily, and reopened in from two to four months. In 49 of these 56, pulpitis and pain in a greater or less degree existed (in many there was suppuration); in 7 there was exposure without inflammation or pain. In 53 of these 56 the results were perfectly satisfactory, that is, upon opening up, the pulps were healthy and generally normally sensitive. In a few instances there was dimin-

ished reaction. All were refilled permanently—usually capped again with formagen. In no case, so far as I can ascertain, nine to twelve months after, has the pulp since died, although I was prepared for such with the partly anesthetic pulps. Of the remaining three experimental cases 2 were undoubted failures, the pain remaining excessive, and no improved pulp condition following. In the third case the tooth gave no trouble, and the patient neglected to return as directed, until at the end of fourteen weeks, the temporary gutta-percha having disintegrated, pain recommenced. As he was shortly going beyond the reach of a dentist, and as I had insufficient confidence in formagen at that time, I applied arsenic. Under the circumstances this may fairly be added to the list of successes. Twenty-three cases are left (mostly of a more recent date), each of which I dressed with formagen, and filled permanently at the first visit; 9 were exposures of healthy pulps which all did well; in 14 there was inflammation and pain of varying degree. Of these last I was obliged, other means failing, to drill out one, and dress with arsenic. With another a somewhat curious thing happened. Some time after filling, the patient, who resides at a distance, suffered pain, and applied for assistance to the local general practitioner, who promptly pounced upon this (an upper molar) and extracted it. The pain continuing, the next day he came to me, and I found the cause to be (as is by no means unfrequent) a lower wisdom, which I extracted. I made a careful examination of the upper tooth, from which I drew some deductions upon the action of formagen. The pulps, though somewhat shrunken, had apparently been restored to health. My opinion upon this point was confirmed upon microscopical examination, some sections showing, in addition, unmistakable calcospherites. It is possible that these may have been present independently of injury or disease, but I am inclined to the hypothesis that they were the result of reparative process, and demonstrate not only that the pulp survives, but that its cells may resume their original functions under the protection of formagen.

The method of applying formagen merits discussion. My own original plan was to remove the most softened only of the *débris* over the pulp, wash with dilute carbolic, dry, and place the cement in position, filling over with temporary gutta-percha, without any cap. Latterly I have been more careful to remove all carious tissue over the pulp, where possible without excessive pain. I have then placed the cement in the hollow of a gold cylinder, flattened out and made concave, and applied it thus, covering with oxyphosphate to avoid pressure in subsequent filling, which has usually been permanent. Judged by results there would appear little to choose between the two methods, but theoretically, at any rate, the latter is the better. There is no doubt that the unyielding envi-

ronment of the pulp accounts for much of the want of success that has hitherto met our attempts at its conservative treatment. The desideratum has been to combine with medicamental treatment some mechanical agency to relieve inflammatory pressure. Such means would be a yielding or absorbent surface in actual contact with it. I have a suspicion that the layer of formagen touching the pulp remains somewhat elastic. We know that the cement fulfils the second condition, and is capable of absorbing liquor sanguinis. For these reasons, and also to provide a surface for the action of the reagents, I do not hesitate to freely expose the pulp. The cap is as much for convenience of application as for the avoidance of subsequent pressure. The importance of the mechanical properties of the preparation is perhaps secondary to its specific action, which is not yet thoroughly understood. A probable theory has been suggested, as the result of a series of experiments by Bauchwitz. He says that the carbolic eugenol first acts as an anodyne (the eugenol increasing the hyperemia); the nascent formaldehyde then penetrates the whole tissue, destroying pathogenic germs and coagulating the albumen, stasis following. The pressure caused by the hyperemia, and exudation of liquor sanguinis, is relieved by the absorbent (*and possibly yielding?*) cement, and hence little or no pain results. Such part of the pulp as was not decomposed before treatment then resumes its normal functions. The theoretical objection has been raised that eventually the pulp probably dies, the formaldehyde merely arresting further pathological changes. Experience, however, appears to show that (at any rate in the majority of cases) this is not so. Even Kunert, who disapproves of the Bauchwitz theory, found that, some months after treatment, in most of his cases, the pulp reacted normally: Others have confirmed this. Of my own cases, as I have said, only three—all badly suppurating—had a contrary result, and in these the method may have been in fault. But allowing these the percentage is not unsatisfactory.

There are other uses for formagen. One of these is the filling of roots. I have only latterly adopted it for this purpose, but so far with entire success. I can imagine no more ideal material, because of the extremely penetrating and germicidal power of formaldehyde. It may also be used for embalming devitalised pulps, which for any reason it is undesirable or impossible to remove. It is of special service in cases of tortuous or constricted canals. Professor Bouncken has recently recommended a formula containing formalin for this purpose, but it is a questionable improvement upon formagen.

The manipulation of formagen is rendered more difficult by the persistence with which it clings to the instruments when applying it. Possibly this will be remedied. Meanwhile Dr. Schallen-

muller has introduced an almost identical cement, but devoid of objectionable stickiness, which he terms formageno. So far as I have been able to ascertain, the action is not interfered with by the trifling difference in its constitution, but my tests have not, of course, the advantage of time.

In conclusion I may sum up the deductions which I have drawn from my use of formagen, as follows :

(1) It approaches compliance with the conditions of an ideal pulp dressing laid down by Dr. Miller.

(2) It not only does not cause pain, but almost invariably relieves such as already exists.

(3) It appears applicable to all cases not complicated with periostitis.

(4) A permanent filling may at once be inserted over it, except in special circumstances.—*Journal of British Dental Association.*

DISEASES OF THE EYE AND EAR AND THEIR RELATION TO DISEASES OF THE TEETH.

Pont (*Berliner Klinische Wochenschrift*, 1898) says that though known to science for many years, this connection has only latterly been thoroughly investigated. It is not alone diseases of the teeth, such as periostitis, pulpitis, and caries simplex, which occasion derangement of the eye or ear organs, but also operations upon the teeth, viz. : extraction, etc. Derangements of the eye most common are conjunctivitis, keratitis, dacryocystitis, blepharospasm, and even blindness has been reported. The ear diseases are as follows : Pains in the ears, tinnitus aurium, hyperacusis, and deafness. All these derangements are wont to disappear simultaneously with the relative affections of the teeth, or upon the extraction of the latter. Children are troubled with the above mentioned maladies upon the appearance of their first teeth. Increase of temperature is occasionally produced, which when conjunctivitis exists suggests measles. Secondary derangements of the ear are found in adults upon the appearance of their wisdom teeth.

Proceedings of Dental Societies

VERMONT STATE DENTAL SOCIETY.

The Vermont State Dental Society will hold its 23rd annual meeting at Burlington, Vermont, on March 15th-17th. Headquarters at the Van Ness House. A cordial invitation is extended to all members of the profession.

THOMAS MOUND, *Secretary*, Rutland, Vt.

Legislation

AN ACT TO REGULATE THE PRACTICE OF DENTISTRY : VERMONT STATUTES, CHAPTER 191, AND AS AMENDED IN ACT 114 OF THE LEGISLA- TURE OF 1898.

Sec. 1.—A Board of Dental Examiners is hereby created, which shall consist of five dental graduates or practitioners, to be appointed by the Governor in the month of November biennially, and to hold office two years from the first day of the following December, and until their successors are appointed. Vacancies shall be filled by the Governor.

Sec. 2.—The meetings of the Board shall be held annually, or oftener, on the call of three members, who shall give thirty days, notice thereof in at least three dental journals circulating in this State.

Sec. 3.—The Board shall, at its meetings, examine applicants, and grant a license to such persons as they find qualified, on the payment of ten dollars.

Sec. 4.—Members of the Board shall receive three dollars a day and necessary expenses for the time spent in examining applicants and granting licenses, if the fees received from applicants during the biennial term in which such service is rendered are sufficient to pay the same; and at the end of each biennial term the Board shall file with the State Auditor a report of its receipts and disbursements verified by oath, and shall pay to the State Treasurer any excess remaining in its hands.

Sec. 5.—If a person without a license practises dentistry for a compensation or reward, he shall be fined not more than one hundred dollars and not less than twenty-five dollars. But this section shall not apply to extracting teeth by a physician or surgeon licensed under the provisions of chapter 190 of the Vermont Statutes.

Sec. 6.—The Board shall keep a book in which it shall enter the name of each person licensed.

Sec. 7.—A person who receives a license from the Board shall, within thirty days from the date thereof, cause it to be recorded in the office of the Secretary of State, who shall be entitled to twenty-five cents for recording the same.

Sec. 8.—If a person does not cause his license to be recorded within the time required by the preceding section, he shall forfeit the same, and shall not be relicensed until he has paid the Board ten dollars.

Sec. 9.—This Act shall take effect from its passage.

Approved Nov. 8th, 1898.

Reviews

Appleton's Popular Science Monthly.

The Canadian Magazine.

Saturday Night.

These three journals are the very best literary additions any intelligent dentist in Canada can make to his reading table. The former has a magnificent monopoly by reason of able management, and the intensely interesting character of its contents. Each issue is more than equal to most of the books on scientific subjects, while stimulating thought and inquiry. Not only the scientific but the literary character of the contributions are ahead of the general run of monthly journalism. We would suggest to our readers that they purchase the January number as a specimen. The knowledge to be acquired in this fine American periodical, fits a man for the companionship of his mental superiors in matters of science. It cultivates a taste beyond that of the mere money-grubber.

The *Canadian Monthly*, published in Toronto, is enjoying the benefit of the failure of its predecessors. But it has earned its success, not by the shipwreck of former ventures, but by the ability of its editor, and the enterprise of its publishers. Mr.

Cooper speaks out frankly but never foolishly, and he does not pose, as did and does Prof. Goldwin Smith, as of superior mental calibre to the rest of creation, or as a political prophet, whose predictions have the annoying trick of contradiction. Unlike the doleful Professor, Mr. Cooper leads public opinion towards political construction and patriotism. Prof. Goldwin Smith aimed to lead it towards national destruction and parasitism, and, Heaven be thankful, he failed. Canadians, as citizens owe a duty to the *Canadian Magazine* which they owe to no other. It has no possible rival in journalism. It is intensely Canadian and Imperial. It is a literary link with the monthlies of the mother-country, while it makes for good will towards Brother Jonathan.

Saturday Night. Many attempts have been made to supply a clean, racy, bright and sparkling popular weekly in Canada. Until Mr. Shepherd put the force and fluency of his genius into *Saturday Night* none ever succeeded. We do not know of another weekly on the continent so well suited to the taste of the average man and woman. It is refreshing every week to feel that our families can have placed before them, a paper so free from the vulgarity and sensationalism common to many of the modern weeklies.

Self-Examinations for Medical Students, with the proper references to standard works in which the correct replies will be found. 2nd edition, enlarged; pp. 189. Philadelphia, P. Blakiston, Son & Co., 1899. Price 10 cents.

A neat vest-pocket book, containing 3,000 questions on all the branches of medicine and surgery.

Dominion Dental Journal

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INFIRMARY PRACTICE.

So many unimpeachable proofs exist to show the abuses of hospital and infirmary practice in our Canadian cities, that one would suppose any suggestion to prevent these abuses would be welcomed. Those who are responsible for the necessary supply of clinical material for dental students have nothing personally to gain. They are far too honorable to divert the best cases to the extra advantages of their own private practice. They are interested only in obtaining enough, not an excess, of clinical work for the students, and in getting enough money out of the patients to cover the cost of materials. It is often difficult to draw the line between the "deserving poor" and the class who are able to pay something. With few exceptions, the servant-girl class have no claim whatever in our cities to the privilege of infirmaries. One who is familiar with the appearance and dress of the average patron cannot honestly affirm a belief in their inability to pay the modest fees of struggling and respectable young dentists. Only very radical measures can abate these abuses. Besides, there are hundreds of emphatically "deserving poor" among the inmates of our charitable institutions, from whom sufficient clinical work could be obtained. We were told that efforts to secure such had failed, but we failed to discover that any very general or serious efforts had been made. The perfunctory suggestion that "the

infirmary is prepared to meet the requirements of the inmates, etc.," is no effort at all, but a lame excuse for effort.

Within the last few years the quacks and quack-imitators of Toronto and Montreal have openly declared that they were instigated to their methods and reduced fees by the public competition of the infirmaries. "We cannot compete with such organized centres, unless we do it whole sale and by the sensationalism of loud advertising." "Close the infirmary competition," wrote one of these gutter men, and I'll stop advertising." Of course we are not constrained to believe anything these parties declare. It is fair for the infirmaries publicly to advertise "free dentistry," why is it not fair for licentiates to advertise "cheap dentistry"? These institutions may be said hypocritically to represent the ethical principles of the profession. They publicly break the very code they pretend to uphold, by advertising "free" dentistry.

A GENERAL PRINCIPLE.

There is one general principle which should be impressed upon the licentiates. The Boards and all other elected bodies are the stewards of the profession. But who are the dictators, the elected Boards or the electors? Certainly the latter. No Board, individually or collectively, would dare to presume that, because they have been appointed by the votes of the profession for a term of office, they have the right to make and unmake the Act of Incorporation, and do violence to the instructions of the electors. Whatever policy the majority of the electors decree must be carried out to the letter. This fact does not seem to have been clear to the foggy minds of some past members. The question now arises, "Have the licentiates as a body ever discussed and decided the extent to which infirmary practice shall be supplied?" If not, why not? The general principle is overlooked that the professional body, not the Boards or the Faculties, is the one absolute dictator in all these matters. In details of method and management, ample liberty is allowed to the representative bodies, but this liberty is, or should be, restrained by fixed limits. If the professional body by resolution instruct the elected authorities to give the public gold fillings and gold plates free, the elected authorities would be obliged to attempt the experiment. On the other hand, if the professional body instruct the elected body to restrict the privileges of infirmary practice to the inmates of charitable institutions; that they were not to solicit business through the public press; that they were scrupulously to follow certain regulations; that students should be prevented from removing their instruments, on pain of

dismissal, from the infirmary to practise on the sly, the elected bodies would be compelled to do so. If the professional body decreed that any professor booming himself on private card, in city directory, or the public press, as officially connected with the school, should at once be dismissed, another grievance of the quack-imitator would be removed. So far as the Royal College of Dental Surgeons is concerned, these remarks do not apply; but they have applied very forcibly to the school in Quebec Province. We have never been convinced that the infirmary in Toronto could not repress, even more extensively than it does, the class outside of the charitable institutions. However, the professional body have this matter in their own hands. It should not be impossible to induce enough of the public charitable institutions of the cities to furnish all the clinical material required for the students, and even to donate the small sum sufficient to pay for the cost of expensive materials. Of course if it is the policy to seek a financial surplus, this would fail; but this policy is decidedly wrong. If the infirmaries are keen and cutting competitors with the respectable class of young dentists; if they beguile the public with the idea that they can afford to give "free" dentistry and even afford to advertise the fact, they do mischief, and put an argumentative weapon in the hands of the quack-imitator. It is a mighty unsatisfactory showing for all our organized effort and educational work, that coincidently with our practical and educational progress, an ethical and social degeneracy has occurred, which, if continued, will make any gentleman blush to be known as a dentist. There is no disgrace in being tinkers and purely commercial dealers in mechanical dentistry. The disgrace is to be this, and to ape the principles of a profession. Do we sufficiently reflect upon this question? We have a magnificent monument to the personal energy and fidelity of the professional body of Ontario in relation to education. What sort of monument are we making to show the ethical instinct and the professional pride, without which we have no claim to assume that dentistry is one of the learned professions?

A HINT IN ORTHODONTIA.

It sometimes happens that the second bicuspid are lost before the second permanent molars have erupted, and if neglected the latter would travel forward. It is frequently desirable to retain loose deciduous cuspids for some time, lest the bicuspid move too rapidly to the front, and narrow the space for the forthcoming cuspid. In all cases where these teeth are lost it is advisable to

insert a vulcanite plate, with thin piano-wire retainers, pressing gently against the obtrusive tooth. The vulcanite might occupy the space of the lost tooth, and should be cut away from time to time to accommodate the erupting tooth. Many an unsightly irregularity can in this simple way be prevented. A treatise might be written on the mechanical prevention of extreme irregularities. Some of the most interesting and successful cases in our practice were begun before the roots of the teeth which were moved were fully completed. In fact, the success of several noted cases was only made possible because the regulating was begun as early as the ninth year.

EDITORIAL NOTES.

WHEN dental journalism was first attempted in Canada (1869) it met three sorts of reception. There were about twenty-five practicing dentists in the whole Dominion who welcomed the venture by practical co-operation. There were about a hundred dolorous Cassandras who advised abandonment and predicted failure, and so certain were they of their opinion that they received the *Canadian Journal of Dental Science* for four years every month, and have never to this day paid a cent of the subscription. There were a few who did some service to ruin it. After it had appeared regularly for two years it absolutely leaped into favor, and we often enjoyed the fun of withholding it from delinquents, until they'd write indignant at the delay of a journal for which they had not paid. Of the three classes none gave us such insight into human nature as the class who never said a good word or did a kind deed for the bantling, and yet who never said an unkind word or did an unkind deed. The type is represented commonly in official life. Men of this class get into office. When not in office they might as well have been unborn for all the use they were to the profession. They meant no harm and did no harm, but they lived in the serenity of pure selfishness. But in office they gape with wonder that there are dentists who do as they did. They seek applause, and find criticism—or indifference. Never having helped their predecessors, they expect help. Cassandra is not yet dead.

WITH this number of a new volume, we take the opportunity of thanking the members of our staff, and our correspondents, for their valuable co-operation during the past year. There is no money in it for anybody, the publisher included, and if each one consulted his own private interests, everybody would cease their connection. It is generally recognized that few, if any, medical or dental journals "pay" enough to justify a business man's investment, unless collateral use is made of them for manu-

facturing interests with which they are directly connected. "Why then," it may be asked, "is the JOURNAL continued?" Just because there are enough men to give time and thought to its interests, as a simple matter of duty; and just because, too, that there are advertisers enough, enterprising and generous enough to assist us. There is no use pretending that we could maintain a monthly of this size, and at the price of one dollar a year, were it not for our advertisers. We feel perfectly free to ask our readers to deal as exclusively as possible with them. They pay to get Canadian trade and they should have it.

NOTHING wears one more than the sniffing optimism of the critics who condemn what they call "censorious pessimism." They deplore the deliberate lying of the loud advertiser, but they hide their heads and hold their tongues, and hope by their silence for reform. Why do they not organize some sort of missionary enterprise to deliver these professional liars from the Gehenna promised them? The dentist who calmly puts his name to the barefaced lies and imposture, which to-day degrade the professional advertisements of Toronto and Montreal, is just as sure of Gehenna as if he lied about things in general, as he is pretty sure to do, as well as about his own abilities in general.

ONE of the best practitioners of Toronto who, some years ago, settled in a sunny part of the United States on account of bad health, wrote us lately, that he never before knew what it was to enjoy the real peace and content which comes from good health and prosperity. "When I was in Toronto, though having a good practice, I was in fact poor. The credit system is the curse of dental practice everywhere in Canada, but here the people pay cash, and one feels encouraged, not only because he gets his well-earned money, but because the people who pay cash are almost always appreciative patients."

HONESTY has many interpretations. There may be honest differences of opinion in politics and religion, in commercial methods and professional practice; but there cannot be an honest difference of opinion as to the destroying influence of fire, or the vital importance of sunshine. There cannot be an honest liar. The advertiser who declares that he will give as good a set of artificial teeth for \$5 or \$10 as can be got for \$25, makes no pretence at honesty. He lies, and he is not ashamed of it. It is part and parcel of his nature and his stock in trade.

OUR friend, Mr. Wm. Booth Pearsall, of Dublin, Ireland, author of Pearsall's "Mechanical Dentistry," was married last October to Miss Florence Boake, of Kelley's Island, Ohio. Of such forms of "Annexation" may there be many between John Bull and Jonathan.

It is a source of amusement to members of the Board of Examiners to witness the pretentious lying of the cheap advertisers. The imperiousness of the gall of this class is only surpassed by their impertinence. As one of them remarked: "Well, you know it is check that gets the business. You may be very wise and clever, but you need the check, or merely get some good advocate who has the check for you. If you have lots of check you can get along on a very small capital of knowledge and skill."

THE *Journal of the British Dental Association*, vol. xx, appeared last month as a new series in a new and enlarged dress. It is more attractive to the eye. It is always a welcome and valuable exchange.

Obituary

Died at Toronto, October 28th, 1898, S. B. Chandler, L.D.S. one of the pioneer dentists of Canada. He was born at Richville, N.Y., October 7th, 1827; received his early education in the public schools in his district, and began life as a village school teacher. It was one of the tales he enjoyed telling, how he engaged to teach at fifty dollars per quarter, with board thrown in, the board being supplied in rotation by the residents of the section.

S. B. Chandler began the study of dentistry with Dr. Austin, of Ogdensburg, N.Y., and after becoming sufficiently proficient to practise on his own account he came to Canada, settling in Port Hope, Ont., in 1848. Shortly after beginning practice he began the sale of dental supplies to neighboring dentists. After a few years' practice in Port Hope he sold out and removed to Newcastle, Ont. Here, in 1859, he married Annie M. Thorpe, of New York city, who survives him. After some years' practice of his profession in Newcastle, he decided to devote all his energies to the dental supply business, and in 1883 he removed to Toronto in order to keep pace with his rapidly growing business.