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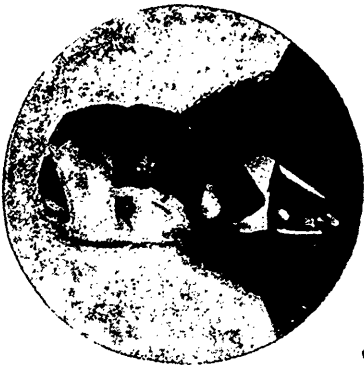
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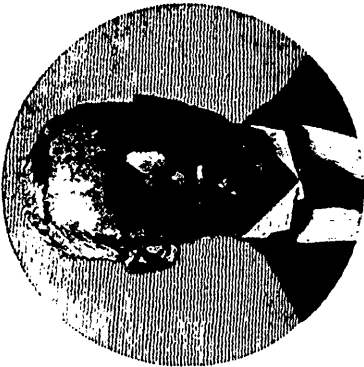
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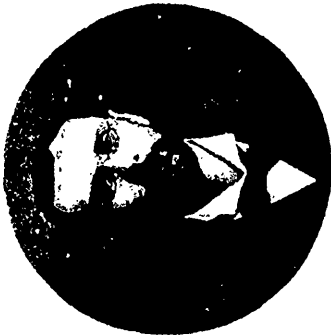
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## Original Communications.

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### FILLING: ITS SUCCESS AND FAILURE.\*

By JOHN E. WILKINSON, Toronto, Ont.

Our subject stands for about three-quarters of the field of dentistry as practised to-day. All other operations and services take up very little more than a fourth of the average dentist's time. Our consideration of "filling" must, on the whole, be quite general, and, at best, very incomplete.

There are some quiet, retiring dentists, having small practices, but who are capable and thorough operators, whose percentage of successful fillings may be greater than that of men prominent as dentists. The kind of work one does is a good recommendation, but circumstances, influence and business tact often do quite as much as one's work in procuring and sustaining patronage. Very successful men at times have severe failures, while highly successful and skilful work may come from the hands of a man considered an unsuccessful dentist.

Ideal fillings are very seldom inserted. No one substance or preparation has all the requisites necessary for an ideal material, which should have the following properties :

- (a) Plasticity for insertion.
- (b) Unchangeableness of form or bulk.
- (c) Sufficient hardness and edge-strength.
- (d) A poor conductor of thermal changes.
- (e) Insolubility in the fluids of the mouth.
- (f) Resemblance in shade of the natural teeth.

A material with this combination of qualities remains yet to be discovered.

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\* Read before Toronto Dental Society.

Successful fillings are those which replace tissue destroyed by decay, abrasion or fracture, endure, prevent future decay for the greatest possible length of time, rendering the teeth useful and comfortable, and producing the best possible appearance. Root canal fillings, temporary stoppings and filling of temporary teeth, will not now be referred to unless incidentally. As our definition is worded, a cement filling remaining useful for only eight months in one character of tooth, may be as successful as one of gold lasting thirty years in another kind of tooth. A few years ago I saw a large amalgam filling in a mesial cavity of an upper central, the work of Dr. Nathan Tupper, of Amherst, N.S., which had done service for thirty years, and from all appearances seemed quite capable of serving thirty years more. This was a successful filling. Had it been of gold it would have been more successful on account of the better appearance. Gutta percha, cement or amalgam fillings in cavities by no means thoroughly prepared, may be more successful work than perfect gold fillings inserted in cavities faultless in preparation. Such cases of course are exceptions, yet they exist, as for example in the case of a frail girl of a hysterical temperament. The former variety of work may be tolerated. The latter often discourages such patients, sometimes seriously injures them, and afterward the teeth are neglected. Without considering the peculiar and puzzling cases we have very great variety in the ordinary kinds of cavities and teeth of ordinary patients.

In practice the selection of the filling material is generally decided upon before the preparation. Gold is, as yet, the best and most reliable substance we have. It should be used for most cavities in the incisors, canines and bicuspid, mesial cavities of first molars, and occlusal cavities of first and second molars if the walls are strong. Exceptions to this will appear when speaking of other materials. Amalgam should be employed in buccals and lingual cavities of molars, unless small, the approximal cavities of the second and third molars, in any cavities in molars or bicuspid (excepting the mesial of the first) where the walls are frail or the teeth soft and chalky in character. It may be employed in the small palatal surfaces of incisors. Cement should be used in the anterior teeth of patients under fourteen years of age, or for older patients where the dentine is soft or the enamel thin and frail. It may be used in large cavities in the molars and bicuspid of the same character. Gutta percha might often be well selected for large cavities on the labial surfaces of incisors where acid or alkaline fluids cause rapid destruction of tooth tissue or of cement. It may be used in buccal cavities of molars, but will not be recommended. Tin will do excellent service in the posterior teeth. Porcelain inlays may do well (for appearance they are excellent) in smaller labial cavities of the anterior teeth. Combination fillings

have also a place. We have been thinking of the teeth regardless of the person, who must always be considered. The temperament, endurance and caprice will be taken into account, also the ability or willingness to pay the reasonable fees to do justice to both operator and patient.

Upon efficient preparation depends an important half of the success of filling. Let us begin with gold. As a rule the approximal cavities of the anterior teeth when prepared will be oval in form, extending from the gum margin to almost as near the points of the teeth as the surfaces are in contact. Even when the original area of decay is small and circular it is well to cut away above and below to avoid ready recurrence. About the only exceptions to this rule are: (1) where the teeth are very strong and dense, and (2) where there is a free space between them. Toward the cervical margin especial care is necessary in cutting away so far as there is any superficial defect in the enamel, and when the groove for undercut is obtained, equal care is required to have fairly strong, well-supported margins, leaving no scale-like edges to be fractured on inserting the gold. Turning our attention to the palatal walls or margins which are often quite in contact, also thin and frail, a greater proportion of successes will be had if these are cut away till strong edges are obtained. The complete margin is best to be levelled outward, the emery or cuttle-fish disks or strips being used after the burrs or chisel. For undercut, the groove of the cervical margin should not be circular or even oval, but is better to be in a straight line so as to prevent rocking. Pits may or may not be used, but perhaps better results are obtained in their use. The retention toward the incisal edge is often the difficult and critical part, especially in thin, slender-edged incisors. Where the corner of the tooth is gone the case is more difficult. Deeper grooves are needed in the seat of the cavity. Some help may be obtained by a groove, not undercut, to form a rest on the palatal or labial wall, then getting the best possible undercut at the point. If the nerve has been removed, retention may be gotten by cementing a pin or post into the canal. Even if the nerve is still alive, a pin may be used by being threaded, then screwed into the seat, a way having first been drilled with a burr of proper size. With labial cavities, extending well under the gum margin, it is the writer's experience that the moisture can be better excluded and at the same time more thorough preparation obtained by doing without a clamp. Sometimes the gum and dam may be kept retracted by holding the long ends of the ligatures. At other times, especially if the festoons be deep and narrow, an excavator held with care and sureness will do the work. Such cavities are drilled well out to either side. When finished the lower and lateral margins should be slightly levelled outward and smooth. Cuttle-fish disks or small Scotch stone points

will do this. Let us refer to one other class of cavities to be prepared for gold—compound approximal in molars or bicuspid. In these free cutting is especially indicated, in free opening, lateral preparation and at the seat. The walls should be cut away wherever they come in contact, and the cervical margins generally, but not always, carried up to or even under the gum. The undercut is obtained in the sides. The seat is usually better without a groove and should be so formed as to allow a good base for the filling. In preparing the seat, inverted cone burrs are best, and in finishing the margins of the walls the cuttle-fish disks are almost essential where they can at all be used.

Preparation for cement should be thorough, but less work will suffice. The main principles are the removal of all decay, especially at the margins, sufficient undercut, and clean edges.

For amalgam careful preparation is quite necessary. Rather more undercut is needed than for gold, certainly more than for cement. Thin walls coming to the margins are to be avoided so far as is possible. Overhanging walls are to be cut away. In occlusal molar cavities all lines of decay between the cusps extending from the cavities, are to be freely cut out, also any similar defective lines extending over to the buccal or lingual walls. In buccal marginal cavities free cutting laterally will add to the successful service of the filling.

The methods of inserting the filling materials will be thought of in regard to a few points only. Gold first. In anterior approximal cavities, the most common point liable to defect is at the junction of the cervical and lingual margins. The therapeutic action of tin salts is well known. When about to insert our filling, we take a small roll of tinfoil, place one end in the undercut just at this point, allowing the other end to run out over the margin, then fill over with gold, we have at this very weak point a thin and small amount of tin which will oxidize and prove of valuable service. Dr. Hibbert Woodbury, of Halifax, follows this practice and has found it very satisfactory. The only disadvantage is that when finished, a black marginal stain appears, which, on examination by a dentist unacquainted with the method, presents the appearance of a slight leak in the filling. For approximal cavities where the teeth are in contact, separation is often desirable or necessary. Perhaps the most common and best method is that of gradually separating by means of pellets of absorbent cotton pressed well in. For these cavities in bicuspid it is perhaps better to always have some separation to allow the teeth to come into contact after polishing. In labial or buccal cavities an assistant is particularly helpful all the way through, in changing burrs and plugger-points, using the chip-blow and in carrying pellets of gold to the cavities, allowing the operator free use of both hands and hastening the

operation, most important here, and at the same time watching the towels that they collect all saliva if any escapes from under the dam upon the chin and neck of the patient.

With cement, adjoining approximal cavities may be filled as a rule more satisfactorily by doing one at a time.

In filling with amalgam we shall refer just to the application of matrices. They are used for gold and cement, but chiefly for amalgam. With gold it is very difficult to obtain a thorough and perfectly flush-filling with a matrix. For amalgam the case is different. Here the use of a matrix may be very helpful or remarkably harmful, and just as much so its disuse. There are two points almost but not quite opposing: (1) the fillings when completed must be flush with but not overlapping the cervical margins; (2) the fillings, while thoroughly separate, should be in contact. Good judgment is necessary in the application of matrices.

Polishing is almost an essential, certainly an advantage, with every kind of filling. In finishing gold, Dr. Willmott used to teach us in college to successively burnish and face. The usual practice is to burnish as soon as sufficient gold is in, then work away with disks and strips till the desired contour and clean margins are obtained, but rather better results are to be had by using the burnisher at least once again just before finishing with the disks or strips. Amalgam fillings when hard if polished with disks and burnishers are certainly improved. If left as when inserted, the slightly rough surfaces and margins form lodgments for particles of food and fluids.

Examination of the teeth is one of the most important services a dentist is called upon to perform, and a book of examination blanks or charts is one of the most useful articles for the operating room. Some of our confreres who are excellent operators seem not to be sufficiently particular in examining the teeth and tissues of the mouth. These following cases, by no means isolated, will illustrate:

CASE 1.—Miss M.; teeth supposed to be put in thorough repair in February. Quality of teeth average. Came in June to have a broken filling repaired. On examination nineteen cavities were discovered.

CASE 2.—Mr. J.; teeth examined and defects attended to in February. Quality average. In July number of distinct cavities was twenty-eight.

CASE 3.—Miss W.; patient under twenty. Teeth attended to within a year. A number of cavities, also three lower incisors without cavities, but dead, extensive alveolar abscess and fistula.

CASE 4.—Mrs. S.; teeth examined within a year. Three fistulous openings over central, lateral and canine. Genuine maxillary caries. Bone completely gone in front of and between roots and above to the area of a large bean.

Failure in filling is not so common as success as defined at the beginning. Fillings which have been lost by accident or use of drugs as medicines are not failures so far as the operator is concerned. There are failures which the honest operator has to acknowledge. By unsuccessful fillings we mean those where, the conditions remaining constant and no accidents happening, the fillings did not endure as expected, did not prevent recurrence of decay for a reasonable length of time, did not restore comfort, usefulness, agreeable appearance, or fillings which in any way caused more harm than benefit to the teeth or surrounding tissues. On this part of our general subject we shall mention or speak of methods and cases most interesting from personal experience or observation.

Porcelain inlay fillings, both the baked and ready made, are interesting alone from observation. Some beautiful specimens of this work are occasionally seen giving enduring satisfaction. Those prepared in shades and standard sizes with corresponding sizes of drills, are most satisfactory. The line of cement between porcelain and cavity margin is very minute. Yet even it exposes some cement. Let us say this: From observation there has been a greater proportion of failures in porcelain fillings for the amount of work done, than in any other variety. We may say more and state that we believe of the porcelain fillings inserted there have been more failures than successes.

Amalgam and cement combination fillings frequently fail from the fact that the cement is not all covered, but is exposed to some extent at the margins, usually the cervical.

Cement is useful and is indispensable, but it has been and is sadly abused. Many a dental pulp is lost and the complete tooth sacrificed through it. We cannot say its proportion of failures is so great as with porcelain, for much less is expected from it. From its ready manipulation, and lowness of fee, it is more extensively employed than is for the best. More harm comes from it than from any other one filling material. Its uncertain solubility in the fluids of the mouth and its particular tendency to dissolve at the gingival margins while the remainder of the filling may remain almost intact, render it a very unreliable agent.

Copper amalgam is almost a dead subject as a filling for cavities. Nearly all know it, some of us from sorry experience. Others have seen it as our work, sometimes preserving the tooth faithfully but inky-black, disintegrating, and making a cringing noise as the explorer passes over it, at other times a black mass partially disappeared, about which is a large area of soft decay.

Gutta percha after a short while becomes softened and rough or adherent on the surface, which collects solid particles and fluids, producing an unwholesome condition.



With gold it happens often that the pellets have not been as thoroughly condensed at the lingual margin as at the labial. From this cause as well as from that of leaving very thin walls and margins at the same position, decay recurs there readily. Again, there are attempts made to fill cavities with gold where portions are almost inaccessible. Gold fillings inserted in approximal cavities so that they reflect upon each other, giving the appearance of dark spaces, decay or amalgam filling, amount to a failure in appearance.

Filling any approximal cavity which has been prepared, leaving the occlusal wall very thin and frail, is a cause of frequent failure, this thin wall giving way from mastication.

Large metal fillings with no intermediate non-conducting material like cement, gutta percha or balsam varnish to prevent thermal shock, at the least produce much uncomfotableness and often result in death of the pulp with its attendant more serious consequences.

Filling over a dead putrescent pulp can hardly be named a simple failure, unless done by mistake, which is surprisingly possible. Wilfully done it amounts to gross malpractice.

One failure in filling is in not filling, as in the case of the permanent teeth of children where the quality is hopelessly poor. In such conditions the anterior teeth, and if possible a molar and bicuspid for each side of each jaw, might be preserved in some way until about the age of twenty-one.

There are reasons for these and other forms of failures which at least a number of us have had. Having discovered a cause we should do well for our patients and ourselves to set up danger-signals in noting the cases in some practical way. Some of our professional brethren have been and are particularly helpful to us all by publishing in journal and in book the location and kind of some of the rocks upon which we have or might ignorantly run, also the methods by which we may avoid, remove or destroy the obstacles. We both profit by and show our appreciation of their efforts by reading their charts, then choosing courses intelligently for ourselves. Self-reliance will help anyone, but added to this, the more we assimilate and incorporate into self from observation, study and practice, the more there will be to rely upon, failures will be fewer and success greater.

402 Sherbourne Street, Toronto, Ont.

### "SENSITIVE DENTINE,"\*

By DR. R. G. McLAUGHLIN, Toronto, Ont.

In hypersensitive dentine is frequently found the most serious obstacle to the proper and thorough treatment of dental caries. This condition must be considered as an exaltation of the normal sensitiveness of the dentin, and may vary in degree from slight pain to the touch to so high a degree of sensitiveness as to be unendurable. This latter condition often presents so serious an impediment as to forbid all instrumentation till a reduction of the sensitiveness has been effected.

This altered condition of the dentine has been considered by some as an inflammation, but it can be more logically explained as "disturbance caused by sudden or gradual exposure of a tissue which is naturally protected from irritating influences by the enamel."

The normal sensitiveness of the dentine is not high, as is shown by an immediate examination of a surface exposed by accident; but after a few days the exposed surface becomes abnormally sensitive to mechanical contact or application of cold.

When the exposure of the dentine is brought about by the slower process of caries the sensitiveness is liable to be more exalted and is only prevented from giving constant indications of this condition by the presence of carious matter which is a poor conductor of heat and cold. This accounts for the fact that while there sometimes may be acute pain in the early stages of decay, the irritability appears to become less as the disease progresses.

When the dentine becomes exposed by abrasion it is generally not so irritable as when exposed by the process of caries. This is accounted for by the fact that for some reason a change takes place within the tubules by which their capacity to convey sensation is diminished, and in some cases entirely obliterated.

In the case of receding gum with the cementum exposed, a very high degree of sensitiveness is generally encountered. This particular exaltation can be explained by the acid condition of the mucous secretion which is here pounded out on the teeth, combined with the fact that these parts are not so easily cleansed.

It is noticeable, also, that different parts of the same cavity do not present the same degree of sensitiveness. It is almost invariably found that that part of the cavity forming the line of union between the dentine and enamel is the most sensitive, leaving out the theory that sensitivity is always the greatest at the terminal

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\* Read before Toronto Dental Society.

endings of the sensory nerves. This fact is well illustrated in cavities in the occluding surfaces of molars which are almost always more sensitive at their margins.

In the case of cavities partially filled with a soft leathery decay, the zone of highest sensitiveness is generally found immediately beneath the softened portion of decay. After this point is passed the pain generally becomes less acute and in some instances approaches the normal.

It also must be remembered that the condition of the fluids of the mouth exert a direct influence on the sensitiveness of the teeth. One authority states it as an axiom that "no cause is so active as a primary influence in inducing dentinal sensitivity as a constant slightly acid state of these fluids," and conversely that a neutral or slightly alkaline state is non-irritating.

Also in dealing with this subject we must continually bear in mind that constitutional disturbance, especially in the nerve system, contribute greatly to the high degree of sensitiveness to be found in the dentinal structure.

The element of the dentine specially concerned with its sensitiveness is that contained within the tubuli. The exact nature of this matter has not yet been clearly determined, but our experience and observation has shown us that it is capable of extension and contraction, and in looking over all the facts in connection with hypersensitive dentine it is not difficult to conclude that this exaltation is directly connected with an irritated or diseased condition of the contents of these tubuli. The older theory was, that the sensation was carried from the point of contact through this medium to the nerve centre by wavelike motions or vibrations. But when we consider such facts as, that different parts of the same cavity vary in degree of sensitiveness—that in the case of deep leathery decay (as before stated) it is more sensitive immediately beneath than it is a short distance beyond—that in some instances local sedatives modify the degree of pain—and that coagulents generally decrease materially the capacity of these contents to convey impressions, then we must conclude that such a theory is not well grounded, and that these tubular contents are more vitally connected with the nerve centre than was at first supposed.

Having considered the general conditions governing the hypersensitiveness, we will look for a few moments at the general methods of treatment.

The matter of instrumentation is of first importance. In this our motto should be "Avoid pressure." Our burrs should be keen and smooth so that they will cut smoothly and noiselessly. Our excavators should not be thick and dull as many are when received from the factories, but should be so sharp and thin that the razor-like edge will slide under the decay and peel it off in layers.

With proper instruments, lightness of touch and sympathy for our patient much can be accomplished towards alleviating the suffering.

As to special methods of treatment I merely mention, first, cataphoresis. This method, though of recent origin, is already widely known and more or less appreciated. Many in this meeting have had considerable experience with its results, which I trust will add interest and material to the discussion of this paper.

In the case of teeth of poorer structure being badly decayed and often the cavity partially filled with disorganized dentine, I generally find it of great value in alleviating the hypersensitiveness to seal up in the cavity for some days the ordinary oil of cloves. This not only acts as a slight anæsthetic but more particularly has a therapeutic effect on the diseased tubular contents and thus reducing the exalted sensitive condition of this element.

Another topical remedy of considerable importance is zinc chloride. It possesses in a very high degree the two essential properties for neutralizing the sensitive-carrying power of these tubular contents—namely, a great affinity for water, and a coagulating effect on albumen. It is very penetrating in its action and hence should be used with extreme caution in deep-seated cavities, or in teeth of poorer structure. A fully saturated solution of the salt should be applied and left; the period of pain caused by its action has ceased, which indicates that it has passed the zone of exalted sensitiveness. Its action can be immediately neutralized by flooding the cavity with water.

A special remedy I have found to be of practical value in most cases is a combination of chloroform, ether and menthol applied with a hot-air syringe. This has seldom failed me even in the most extreme cases to make the operation at least bearable.

Dr. Clyde Payne recommends in strong terms a combination of carbonate of potassium, cocaine, carbolic acid and glycerine, as follows: Make a saturate solution of carbonate of potassium and glycerine, then a saturate solution of cocaine and carbolic acid and mix the two together on a warm glass slab. After drying the cavity thoroughly with alcohol and hot air apply a drop of the obtundent and continue the blast of hot air for five minutes. Dr. Payne states that with this remedy properly applied he is able to obtain better average results than with cataphoresis.

Other specific remedies might be added to this list, but enough have been mentioned to fill the scope of this paper.

Still, aside from these special remedies, there are always two essentials which tend to lessen the suffering in the dental chair—First, the patient should not at the time be suffering from any nerve disorders. If this is found to be the case the operation should, if possible, be postponed to another appointment. Second, the relations existing between the operator and patient should be

of the most cordial nature. If the patient feels she has full confidence in the gentleness and ability of the operator, she will rest easier in the chair and submit more quietly to the operation. And thus in such a relaxed condition the pain of the operation is much lessened.

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### COMBINATION GOLD FILLING.

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By E. R. RANDALL, D.D.S., Truro, N.S.

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One has not to go very far in dental practice until he will meet with a case which I will endeavor to describe. A front tooth, probably a cuspid, with large shallow cavity on labial surface, extending far beneath margin of gum.

This is exceedingly difficult to fill with gold, as even by using clamps it is almost impossible to get rubber dam up far enough and keep it there. The most satisfactory method which I have found in such cases is to fit a 22k. gold band around neck of tooth 1-16 inch wide at back,  $\frac{1}{8}$  inch wide or less in front, as the case may require, cement this in position pushing it well up under margin of gum. After cement has hardened, preferably at a later sitting the rubber dam may be applied without any trouble, make undercut in cement underneath the band, and put in a gold filling finishing flush with gold band. When all is burnished and polished, you will need to look very closely to detect the joining of the two kinds of gold.

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### RECURRENT APTHOUS STOMATITIS.

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By W. G. B.

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My attention has been many times directed to a form of apthous stomatitis coincident with the catamenia in anæmic patients, which disappears after anæmia has been treated. It is not very difficult for the observing dentist, debarred from the privileges of plain inquiries of the family physician, to discover physical signs and symptoms of menstruation, and within the last seven months I have paid special attention to a number of recurrent cases of the apthous form which periodically appeared with the catamenia or disappeared upon their cessation, with little or no treatment. The signs were of a mild type of oral ulcers covering the gums and lips chiefly, accompanied invariably with hypersecretion of saliva, to which I drew attention in a paper read before the New York Odontological Society, as an almost invariable case of menstruation. Four cases during the

last five months were so remarkably distinct, and in two the indurations were so apparent that I referred them to the family physicians for confirmation, and subsequently learned from them that this appearance had regularly returned for several years. These cases are, I venture to suggest, better treated by constitutional treatment than by local. I refer specially to those markedly associated with anæmic conditions. The local treatment which a dentist might feel justified in suggesting, must necessarily be of little or no avail, without the constitutional treatment which is within the province of the physician.

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## Proceedings of Dental Societies.

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### THE ONTARIO DENTAL SOCIETY.—LETTERS FROM OLD PRACTITIONERS ON THE 30TH ANNIVERSARY OF THE INCORPORATION OF THE DENTAL PROFESSION IN ONTARIO.

DR. NELLES, LONDON, ONT.

As you say, I was the first Canadian to obtain a degree in the dental profession, which I did in 1860.

I had the honor of sitting at the feet of the Gamaliel of the profession in the United States during the two sessions of the Baltimore College, viz., 1858-9 and 1859-60. The Faculty at that time consisted of Drs. Chapin, Harris, Piggott, Bond, Wright, Austin, Johnston, Church and Gorgas, nearly all of whom were medical men and distinguished authors. I spent a short time in Dr. Harris's office, but I never served any apprenticeship in any other office.

I was the first to introduce rubber work in this city. Although Dr. George Elliott was advertising it in Toronto, in 1860, at \$60 per set. For a number of years we got \$40 per set in this city. I also introduced gas, ether, spray, cocaine, and celluloid in this city. One of my students, Dr. H. R. Abbott, is one of the leading dentists of the east to-day.

DR. CLEMENT, KINGSTON.

In answer to the little letter you wrote me to give you something about myself, I beg to say that after finishing my term of pupilage with the late Dr. Waide, of Ogdensburg, I located in Kingston, on the 20th September, 1857 and have been here ever since.

At that time there were only about half a dozen dentists between Cobourg and Montreal, Relyea in Belleville, Day in Kingston, Legge in Brockville, Weagant in Morrisburg, and one in Picton. Now I believe there are nearly one hundred covering the same ground.

Fees were very low for operating at that time, and I regret to say that as the profession is becoming crowded they are returning to the same low figures. It is remarkable how dentistry has become developed since that period. In those days none but gold or silver plates were worn. In order to practice, one had to be well up in metal work, and the fees were very good.

I took an active part in securing our Act of Incorporation. Was a member of the Board of Examiners when the present College was established at a meeting held in Dr. Chittenden's office in Hamilton, and have served several terms on the Board since the College was started.

I have always endeavored to practise dentistry in a professional manner, and if dentists are only true to themselves there is no reason why the dental profession should not stand on an equal footing with other learned professions.

DR. J. O'DONNELL, PETERBORO.

I was always a great advocate of the Ontario Dental Society meetings, and as a rule attended, because it is a well-known fact that the flourishing condition and standing of the profession to-day, must be attributed to a little dental association formed at the Queen's Hotel, Toronto, thirty-one years ago last January, and consisting of only nine members. In this case the old rhyme is verified again, "Large trees from little acorns grow." Let me tell you that the great city of Toronto did not contribute a single old and leading dentist to that assembly. Mr. M. E. Snider, a young but enthusiastic dentist, was the only one. This meeting appeared to be beneath the notice of the great men of that day in Toronto. It was the small cities and towns from whence they came. The city of Kingston sent Dr. B. W. Day, Hamilton sent C. S. Chittenden and D. A. Bogart, the town of Brockville; A. D. Lalonde, Picton; H. T. Wood, Cobourg; F. G. Callender and J. S. Scott, Peterboro; your humble servant, J. O'Donnell, and, as before stated, Toronto, M. E. Snider. The above named formed the first Dental Association in Canada, therefore I have great respect for and sympathy with the Ontario Dental Society to-day as well as in the past. I congratulate you, sir, upon having had the honor of presiding over the dentists of this Province. I too, sir, had that distinguished honor, and venture to hope that during your tenure of office there has been less rivalry and more harmony than during mine. In my day all wanted office, and if not got, kicked over. In one instance a rival society was formed. This was the means of dividing the profession into two hostile camps, thereby causing dissension, and destroying that harmony that should prevail, as originally intended.

Office should be of minor consideration; in fact, the office should seek the man instead of the reverse. I may here state that I think

the meetings of the Society should be held at the time of the election of the Board; that the election of the Board should be as formerly instead of the present mode, an open general meeting by ballot. The districts could each meet and elect its representative.

DR. MARTIN, OTTAWA.

In 1860 when I commenced in my brother's office, mechanical ability was pre-eminent to success. Harris' "Principles and Practice" was my principal study. Having a limited, very common school education, I was not very familiar with chemistry, physiology, anatomy, etc. Besides being a French Canadian, I was very deficient in the English language (traces of which you will no doubt notice). But during my career I met many coming from College, and this contact gave me hope! Being a gunsmith and consequently poor, I was from necessity compelled to make most of my instruments; some of them I still use—pluggers, stump elevators, hand drills and lathes. I still use, almost daily, in preference to any I have seen, a steel finger ring with socket to facilitate rotating hand burs and drills. This I made of a piece of steel from my wife's corset and I oft repeat the same gag to my patients, that I let nothing go to waste although it had been to *waist* for some time! Some remind me, with a sigh, that I said that before! I need not give in detail the progress that has been made since 1860. The dental journals have from time to time given sketches of the manner of practice by dentists before incorporation, and, no doubt, my old friend Dr. Wood will describe to modern graduates how the old pioneers struggled for existence. Then each had some mode of manipulation different from the other. The organs of invention were exercised to discover something superior to anything his fellow-dentist possessed. When some useful discovery was made, it was often kept a secret, and used to demonstrate superiority. I recollect using for a short period a fusible metal for filling, composed of bismuth, cadmium and tin, and fusing it in the teeth; that was not a useful discovery, and was discarded. The only means for drilling and burring was by finger and thumb. The skin became hard and callous, frequently sore, and always very tiresome. My brothers and myself put our heads together in order to discover some motive power for relief and expedition. We had a number of pulleys, wheels and spindles constructed, and nearly perfected, when a Yankee comes along with a much simpler construction which we bought for sixty dollars! Then it dawned upon me that there were others from whom I could derive benefit. A more liberal feeling grew, that as I derived benefit from others, I also should contribute what knowledge I possessed for mutual benefit. The same spirit animated others, and the reputable dentists joined and became incorporated.



Gold and silver were principally used for base plates, single gum teeth had to be artistically ground and filled separately. I witnessed the introduction of gum sections, the vulcanite, the clumsy vulcanizer, and the rubber dam. Then we used *sometimes* a damn when a gold filling was spoiled by moisture. The old reliable but much abused amalgam will receive attention from Dr. Black, of whom I have heard much, as one who has contributed largely and beneficially to the profession. I would have liked to hear him, and witness his demonstrations. I hope details will be published and distributed among the physicians, so as, if possible, to disabuse some of their minds, and modify their condemnation of its use; some of them claim that mercury is absorbed in the system. By their recommendation many poor people, who could ill afford it, have had all amalgam fillings removed that were safely preserving the teeth. I occasionally see persons enjoying good health who have had for over thirty years six or more large amalgam fillings which have and are to-day still preserving teeth that would long ago have perished. I have filled teeth when removing the pulp was not thought of (at least by me). After filling, the tooth was drilled on the side, and the patient instructed to prick the opening and allow the gases and pus to escape, when soreness was felt! Alas! the end soon came; the constitution was bad, and would not tolerate the dead substance. It is strange that it did not occur to me that roots supporting pivot teeth very seldom gave trouble, and that other roots properly cleaned would be equally free. Still, when we could not save the teeth, we could insert artificial substitutes very lifelike and substantial; we have the continuous gum on platinum plates as well as single teeth on gold and silver. Our object then was to screen the work as being artificial; at present the reverse is apparent, judging from the gold displayed in many mouths; some look like door plates waiting for an inscription, and seems an imitation of a barbaric age. I have in possession a full set of teeth made over one hundred and thirty years ago, with gold spiral springs, for retention; the molars carved from walrus ivory, the mineral anterior teeth riveted on a gold plate, by a gold pin piercing the centre; the whole lower plate carved from ivory with mineral teeth beautifully carved and fitted into it. The work must have cost a great amount of time, skill and labor. It would put to blush the best modern bridge work.

DR. RELVEA, OSWEGO, N.Y.

You suggest that I give you some of my recollections of pioneering in Canada. Fresh from my preceptor's office, J. S. Wood, M.D., the Medical College at Albany, and favored with many good testimonials, a good outfit and fair stock, I launched my bark upon the sea of great expectations. After visiting several cities and towns of northern New York I made my debut in Canada

at the old Limestone City, July 1st, 1842. Kingston, though the capital of all Canada, had a population of only 14,000 inhabitants and no local dentist.

The late Dr. D. S. Golary, of this city, made professional visits there when called. Not being favorably impressed with Kingston I went on a prospecting tour; went by boat to Belleville, then to Toronto by stage. I made the acquaintance of a Canadian M.D. who was on a lecturing tour, and who afterwards located at Buffalo as an oculist. He was anxious to make a canvass of the Canadas, and prevailed upon me to join him. We went to Chatham and from there visited every town and city in Ontario, then Upper Canada. Bear in mind there were no railroads in Canada in those days. At Montreal there were three dentists, but only two at Toronto. We found no local dentists in any of the large towns such as London, Woodstock, Brantford, Hamilton, Cobourg, Belleville, nor in any eastern towns. The entire country then depended upon trunk-in-hand itinerants, and the unskilful operations performed by most of them will long be held in remembrance by an outraged community. The country was infested with those quacks, and truly some were curiosities. One came to my rooms and prided himself on having filled seven cavities before breakfast, his patient an apprentice, his office the blacksmith's shop, and his operating chair a wooden horse. A great overgrown denizen introduced himself as Dr. So-and-so, and stated that he was the tooth-puller for all the country, and, to impress me with his importance, he illustrated by that peculiar wrench necessary in the use of the turnkey and said, "*It takes me to yank them out.*" One aspired to plate work; he got as far as the metal mould and then hammered the plate to it; he had no conception of the counter mould and I was mean enough not to help him out. The country people were poor and illiterate. One asked me what is dentistry? What do you do? Allow me to congratulate you and the members of your Society that you are living in this advanced age. Dentistry has within my short recollection worked its way up from comparative quackery to a scientific and honorable calling, and the advance in the art has principally been accomplished through colleges, journals and societies such as you are now holding. I hope you will urge the members of your Society to support the CANADA DENTAL JOURNAL. The noble editor has more than held his own, and much credit is due him for the courageous manner that he has ever wielded the scalpel in ridding the profession of those excrecences that are ever prying upon the community.

DR. B. W. DAY, LOS ANGELES, CAL.

Your communication of January 25th was a pleasant surprise, and should like so much to attend your celebration on the 4th of March next, but the distance is too great. Well, it hardly seems

to be thirty years since I issued the circular to the dental profession asking if they would attend a meeting if notified when and where, with a view of forming an association, and also a bill of incorporation. I found in the profession a sufficient number of loyal and hard workers who responded in the affirmative. At that meeting the Association was formed. Then when the incorporation of the profession was brought before its members we found some, and may say a strong opposition, claiming the Association was all that the profession required, but the supporters of the bill carried the day, and am proud to know that both the Association and incorporation are in existence to-day and have done good work in raising the standard of the profession to a grade that it never would otherwise have attained. Now, while I had something to do in bringing this about, it would have been a useless undertaking had I not had associated with me those who showed energy and ability, and used it to place the profession where it belonged before the public; and am also pleased to know that two of the old veterans, Drs. Wood and Willmott, are still in the harness. You have my good wishes and absent support in your thirtieth birthday, and may the profession be as much advanced in the thirty years to come as it has in the thirty years past.

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## Translations

Edited by CARL E. KLOTZ, L.D.S., St. Catharines.

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### FROM GERMAN DENTAL JOURNALS.

ABOUT NEW METHODS OF TREATING DISEASED PULPS.—Dr H. Bönnecken, professor at the Imperial Institute in Prague. The usual method of treating diseased pulps (I refer to the cauterization with arsenic followed by the extirpation of the pulps and filling the root canals) has two drawbacks. Firstly, the time it requires, and secondly, the pain caused to the patient. To place myself in the proper light as regards this question, I may observe that I consider the ideal to be sought for is to remove every trace of nerve fibre from the canals, thoroughly sterilize them, and fill to the apex. Only from a tooth thus filled are we certain of permanent success. Unfortunately in a great many cases this ideal cannot be carried out. To enter and remove every trace of nerve fibre out of the canal of an anterior buccal root of a sup. molar, or from the narrow root of some bicuspid, is sometimes a very difficult matter; in such cases we are forced to leave some of the nerve fibres in the canal, also in some which are easily accessible we cannot complete the operation of extirpation of the nerve on account of the pain caused, in spite of the use of arsenic, cocaine or chloræthyl. The opening out the

pulp chamber with a sharp burr drill, and the removal of the pulp is generally painless, but the entrance into the canals is oftentimes very painful. How can we now fill a tooth successfully with the nerve fibres left in the canals?

Do we possess a remedy that will effectually destroy the vitality of the nerve in a short time, and at the same time keep it in an aseptic state? Without enumerating the different remedies and by whom they were introduced, I will give you the result of my experiments with another remedy which appears to have solved the problem. This remedy is formaldehyde. My observations on the effect of formaldehyde on living pulp tissue induced me to try this new remedy as regards its value in teeth after the application of arsenic. I wanted to find out if it was possible to coagulate and harden the remaining nerve fibres, after arsenic cauterization in the mouth the same as microscopic specimens are prepared and hardened with it. I commenced my experiments with the commercial 40 per cent. solution. The teeth treated were molars and bicuspids with acute or chronic pulpitis, but not such having decomposed pulps. Two days after the application of arsenic, the rubber dam was adjusted and the pulp removed with a sharp round burr drill, the pulp chamber was then washed thoroughly with the 40 per cent. formaldehyde, and a pellet of cotton saturated with the same solution placed into the chamber, and covered with cement followed with a permanent filling at the same sitting. In this manner I treated about fifty cases, and all with the same results, viz., that immediately after the application of formaldehyde, pain would ensue and increase in intensity, lasting from half an hour to four hours; in one case it lasted about twelve hours. The duration of the pain was evidently influenced by the depth of the arsenic cauterization into the root canals, so that in almost total destruction the pain was of short duration, and in imperfect cauterization it lasted longer. After the pain had subsided, the tooth was insensible to thermal changes or tappings. After this experience the results of the formaldehyde treatment appear satisfactory, but, on the other hand, the pain caused in the beginning must be considered a great drawback. It seemed to me that the pain was caused by a too concentrated solution. I tried a 20 per cent. solution, then a 10 per cent. solution and finally a 5 per cent. solution, which latter I have adopted. I also tried to obviate the pain by an addition of cocaine.

Without going into detail of all my experimenting, the following formula is the one I arrived at and am now using:

Cocaini	}	āā	1.0
Thymoli			
Misc exactissimi terendo, addi			
Sol. formaldehyd aquos (40 per. cent.) gutt ×			
Zinc oxid 2.0			
Fiat pasta.			

The addition of thymol in the plaster effects a safe permanent sterilization of the fibre, as there might be a possibility of an evaporation of the formaldehyde, and viable germs might develop. Up to date I have treated about five hundred cases of pulpitis in this manner. In forty-eight hours after the application of arsenic, I removed the pulp and washed the pulp chamber with a 5 per cent. solution formaldehyde, and placed a pellet of cotton with the above paste directly on to the exposed nerves in the canals, and where possible, without causing pain I pumped some of the paste into the canal. The cotton and paste were covered with cement or gutta percha, and the tooth filled permanently. Every one of these cases was successful. I did not require to remove a single filling or extract in any of the teeth. The pain caused by using the concentrated solution of formaldehyde (40 per cent.) was not experienced in a single case where I used the formol paste. The reason I assign for this is the diluted state in which I use the formaldehyde and the addition of cocaine. Another great advantage of this treatment is that the teeth do not discolor. I think I am justified in recommending this method of after treatment of cauterized pulp on the results of my two years' experience. But I will repeat, that I consider the old time style of complete pulp extirpation and filling of the root canal to the apex as the only method with which no fault can be found, but for the numerous cases in which this cannot be done I strongly recommend the forgoing modification.

Although two years' experience is a short time to speak of a permanent success, yet it seems very probable that a sterilized nerve is just as good a permanent canal filling as chloride zinc or gutta percha. Non-success can only occur when the nerve fibres are not thoroughly sterilized. I must lay stress on the fact that the success depends solely upon the thoroughness with which the work is done; the removal of the pulp from the chamber, the washing out of the latter, and the antiseptic treatment of the nerve fibres in the canals with the formol paste. Avoid the unnecessary forcing of the broach into the canal containing live nerve tissue, thus causing pain to the patient. The principal advantage of this treatment is, it causes no pain or inconvenience. I therefore use it particularly with nervous female patients. It is a duty from a humane point of view to inflict as little pain as possible, and for such cases the formol paste has become indispensable with me.

I would not like to close this paper without saying a few words about a method I have been following for some time in the treatment of putrescent pulps, and with such success that it is now a pleasure for me to treat them. The new method is a modification of the sulph. acid treatment of root canals, recommended by Dr. Callahan. I consider the introduction of 50 per cent. sulph. acid into the pulp chamber, and the pumping of it into the canals with

a fine nerve broach, thereby enlarging, and at the same time disinfecting them, a great advancement in the mode of treating root canals. But, if in the pursuance of this treatment, we do not use soda bicarb. for the neutralization of the sulph. acid, as Dr. Callahan directs, but use, as I have done for some time, peroxide of sodium ( $\text{Na}_2 \text{O}_2$ ) by which according to the formula  $\text{H}_2 \text{SO}_4 + \text{Na}_2 \text{O}_2 = \text{Na}_2 \text{SO}_4 + \text{H}_2 \text{O}_2$ , a violent development ensues, which in its nascent state in the canals, brings about an astonishingly rapid sterilization, and we have a method which, after a great deal of experience, I wish to point out as an ideal one.

After the sulph. acid has been placed into the cavity, it will be found that canals into which the broach could not at first be entered, can now be introduced freely, and with several applications can be enlarged with pulp canal cleaners to the very apex. Thus the work of enlarging canals can be accomplished in a few minutes, whereas it would take a very much longer time with the nerve canal drill, if it can be accomplished at all. Nerve canal drills have done more harm than good, and with the Callahan method have received their death-sentence.

Peroxide of sodium, a strong caustic alkali, is a yellowish powder, and should be kept in a well-stoppered dark bottle. Its application is very simple: A Donaldson broach is moistened with water, and dipped into the powder, a few grains will adhere to the point of the broach, and this is worked into the canals containing the 50 per cent. sulph. acid; a bubbling up will immediately follow producing the well-known antiseptic  $\text{H}_2 \text{O}_2$ . If the canal has not been sufficiently enlarged by means of sulph. acid, this will accomplish it, as it saponifies the contents of the canals and the bubbling throws the debris into the cavity from which it is easily removed.

After the cavity and pulp chamber have been cleaned, and the canals treated with the 50 per cent. sulph. acid and peroxide of sodium, which is repeated until no more bubbling follows, the cavity pulp chamber and canals are flooded with whatever antiseptic one gives the preference. I would recommend oil of cinnamon on account of its penetrating powers.\* The cavity and canals are now dried with cotton and air syringe, the canals filled with chlora percha, and the cavity filled permanently with whatever filling material one desires. Formerly I used to fill the cavity with a temporary filling, and after eight to fourteen days remove this and fill permanently, but I do not consider this necessary and now always finish at the same sitting. In cases where the entrance to the canal cannot be found, Dr. Callahan recommends the placing of a trace of the 50 per cent. sulph. acid into the cavity and sealing it with cement. After twenty-four hours remove the cement, and the

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\* I prefer oil of eucalyptus. C. E. K.

walls of the cavity will be found to be white, while the entrance to the canals will be seen as small dark spots. Should one after this not be able to enter a canal with the finest broach, it may be taken for granted that the canal is obliterated, it can be disregarded, and the work proceeded with.—*Journal für Zahnheilkunde*.

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## Abstracts.

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

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DR. TOM CRENSHAW, always full of resources, suggests that a hot-air blast thrown upon the paraffin will melt and distribute it over a cement filling with uniformity and encourage its flow in close approximal surfaces.—*Dental Weekly*.

NERVE PASTE.—The following for a nerve paste, Dr. Chupein says, is sure and painless: Acetate of morphine, hydrochlorate cocaine, powdered arsenious acid,  $\bar{a}\bar{a}$  3 gs.  $\frac{1}{2}$  Mix and use carbolic acid to make paste. The paste must be made on a slab or tile by thoroughly mixing with a spatula.—*Dental Weekly*.

USE SCREWS.—Dr. H. W. Arthur, in *Cosmos*, says that screws should be more generally used for security in contour filling and as a foundation for crowning. In lining teeth the screws should be located at the point where the greatest amount of solid tooth tissue is available without encroaching upon the pulp.

My method of filling root canals is with common lime mixed with water to a pasty condition, with enough carbolic acid and iodoform well mixed with it to give it as much antiseptic and disinfecting qualities as possible. I have used this method over three years and find it satisfactory.—W. D. SNYDER in *Ohio Dental*.

TO REMOVE CROWNS SET WITH VARNISH OR GUTTA PERCHA.—Take a small medicine dropper, put a white cotton string or wick in it, cut it off even with the tapering glass, and then draw in a few drops of alcohol and light it. You have a miniature alcohol lamp with a flame about the size of a pinhead. Heat the tip of the tooth and remove it.—R. E. PAYNE in *Items of interest*.

PUT a mandrel in the handpiece, set the engine in motion and let the mandrel wind on a piece of cotton from the fingers which forms a cotton cone. Then with the aid of polishing powders we can cleanse the crowns and necks of teeth, and get into the pockets and loosened gum tissue smoothing the rough surfaces of the exposed roots and doing it in a merciful way. The size of the cone will suggest itself to the operator.—*Dental Digest*, New York Letter.

DR. G. T. CARPENTER believes that gum tissue may be reproduced where it has receded from the tooth, from pyorrhœa or other causes. His method is to produce irritation by means of a gold band around tooth, the lower edge of band being roughened so as to cause irritation and new granulations. The whole is protected by a vulcanite hood held in position by clasps between the teeth.—*Review.*

PERSISTENT HÆMORRHAGE IN EXTRACTION.—Apply tannic acid locally and administer as follows: ℞ Gallic acid, ℥i; aqua cinnamon, ℥ iij. Sig. Tablespoon every hour till hæmorrhage ceases. Rinse the mouth freely with hot water. Gallic acid is easily assimilated, is rapidly transported by the blood reaching the bleeding vessels promptly through the route of the circulation; does not induce constipation, increases the coagulating properties of the blood.—OTTO ARNOLD in *Cosmos*.

METHOD OF REMOVING PULPS.—J. W. Beetham, writing in the *Digest*, describes his method as follows: After applying the dam and washing out cavity with warm water and then with pyrozone, remove all debris and insert a small pellet of cotton saturated with carbolic acid. Then take 4 per. cent solution of cocaine in the syringe, tell the patient it will hurt only for a moment, remove cotton and place in the cavity a soft rubber plug, pass needle through and well into pulp, and inject part of the contents. In two or three minutes the whole pulp can be removed painlessly by means of a barbed brooch.

NAUSEA FROM CHLOROFORM ANÆSTHESIA.—Where an operation under chloroform has been finished, pour vinegar upon the mask until it is well saturated, and leave the mask in place. As the vinegar evaporates more should be added. This simple procedure has a marked effect in preventing or modifying the nausea after chloroform anæsthesia. It was first advised by a French physician, who says that it acts by the vinegar's forming a non-irritating combination with the chloroform vapor already changed in the lungs.—*International Journal of Surgery*.

NOVEL ROOT FILLING.—Dr. L. G. Noel, of Nashville, Tenn., sends to *Items of Interest* a description of a unique method of filling root canals by means of thorns from the prickly pear, samples of which he sends with his letter. Dr. Noel dries the root as for other filling, then fills the apex with a solution of gutta percha and aristol in chloroform. Fifty grs. aristol to an ounce of chloroform, adding red gutta percha to make a thick cream. The outer layer of the thorn is then severed by running a knife around it at the point where it is desired to break it off, and it is then tapped lightly to place. The thorn may be soaked in creasote before using.



## Medical Department.

Edited by A. H. BEERS, M.D., C.M., D.D.G., L.D.S., Montreal.

DEGENERACY RELATED TO DEFORMITIES OF JAWS AND IRREGULARITIES OF TEETH.—E. S. Talbot contributes to *The Dent. Rev.* (No. 4, April 15, 1898) results of twenty-one years of study of causes of deformities of jaws and teeth in embryology, neurology, anthropology, sociology, criminology in public institutions here and in Europe. Morel and Lambroso had in their laws of degeneracy neglected the jaws and teeth. Spitzka, of New York, and Kiernan, of Chicago, had supplied the neglect in laws which covered the jaws and teeth, as outlined in the author's paper in *Inter. Dent. Jour.* (February, March, and April, 1897), in which he claimed the jaws and teeth the most important indexes of the physical nutrition of the individual from conception to full growth. Treatment of jaws and teeth, therefore, is more important than filling and replacing. The coming dentist will have to expand jaws and correct irregularities of teeth more than to fill teeth, substitute others and treat pyorrhœa alveolaris; he will, therefore, have to study causes in order to treat the deformities. Kingsley, in his "Oral Deformities," published in 1880, had found no more irregularities in idiots as a class than in the lower orders of society; in both amply developed jaws and teeth were the rule; narrow, pinched, and V-shaped maxilla and dental arches the exception. The author has under observation a young man whose head is like that of an anthropoid ape—small, with receding forehead, protruding superciliary ridges, small eyes with large sockets, high and large cheek-bones, small flat nose, big protruding jaws with massive rami and very large teeth, and especially prominent cuspids. Size of occiput alone differed from the ape type. He was animal in appetites, and at 29 became insane. "When arrest of the face takes place, the shape reverts to that of the anthropoid ape." In scale of evolution the forehead becomes prominent and the jaws recede. The evolution proceeded from the Egyptian type to the Roman, and from that to the form in which the face reached the perpendicular line of Camper, which the author regards as the representation of the highest mental and physical development. At this point the human jaw is large enough to contain thirty-two sound and healthy teeth. In the past 1000 years there has been a decrease in the size of skulls of half an inch. "In cases of arrested development and contracted dental arches, at the present time, by actual measurement the decrease is from one to one and three-quarter inches." While bones of the body develop from a nucleus, the teeth calcify from the periphery; are not influenced by individual defects after birth because of the early period at

which they calcify, and are as large to-day as 3000 years ago. Hence, if jaws become too small for the large diameter of the teeth, a break in the dental arch must ensue, and also irregularities of the teeth follow. Few contracted jaws are to be found among the foreign degenerate classes, as seen in our public institutions. In the English-speaking people this is a common stigma. The author in his trip to Moscow visited all countries of Europe except Portugal and Lapland, and in all except Germany, Austria, Holland, France, Norway, Sweden, and England, contraction of the jaws was not observed; in the four first-named exceptions the percentage was very small, in the three last it was very large. In most races of the world the perpendicular line of Camper's triangle has not been reached; in most Scandinavians and Anglo-Saxons it has been reached; the Swedes and English have passed far within it. In New England the same development has been gained as with the English, but not so generally is this true of the Middle and Western States on account of intermarriage with other nationalities. Observations of 10,000 faces from a street corner of London showed 82 per cent. with angles within the perpendicular. Of 3000 London school-children 93 per cent. were beyond the perpendicular. Degeneracy of the human body is brought about by vicious habits, excesses, worry, fright, exhaustion, malnutrition, eruptive fevers after birth—all more efficacious on naturally degenerating structures, such as the face, jaws, teeth, and appendix vermiformis than on other structures. Complete arrest of development of well-formed face or appendix vermiformis may take place as result of a constitutional disease before the sixth year. It may afterwards be transmitted as inheritance. Sufferers from hypertrophied nasal bones, mucous membranes, or polypi, or appendicitis are mostly degenerates. High and contracted vaults are not due to mouth-breathing, but to interaction of evolution and degeneracy. The vault is not pushed up, but is built downward by a lengthening of the alveolar process owing to the long rami. The presence of more than thirty-two teeth is atavism, a return to the type of lowest primates with forty-four teeth. If jaw is arrested, reversion to reptilian type in the V-shape results; or the sides may form the saddle of the carnivoran type—the formation of each being purely mechanical, due to the order of eruption of teeth. The arrested jaw is inherited, but not the deformed dental arch. In 3000 models parent and child were not alike. When the third molar and lateral incisor are missing it indicates degeneracy at conception and arrest of the jaws as well.—*American Medico-Surgical Bulletin*, July 10th, 1898.

THE CONDITION OF THE SALIVARY DIGESTION IN ANÆMIA.  
—Hamill (*Phila. Med. Jour.*, Jan. 22, 1898) states that there has been comparatively little work done as regards the ferment

power of the saliva in pathologic conditions. The researches of Uffelmann showed that in cases with moderate fever the activity of the salivary ferment remained unchanged, while in cases accompanied by high fever, especially with loss of strength, its diastatic power was almost entirely lost. In ill-nourished, sickly persons, Butjagen found the salivary ferment reduced in activity. In an extensive series of studies upon the subject, Jawein arrived at the following conclusions: (1) The quantity of saliva in mild febrile diseases is increased and its ferment action unchanged. (2) In severe febrile diseases the quantity of saliva is decidedly lower and its amyolytic action increased, the ferment evidently being secreted in a saturated condition, an important lowering of the total ferment resulting. (3) After the crisis the quantity, as well as the ferment power of the saliva, is increased. (4) In acute, long-lasting febrile diseases, the quantity of the saliva is not infrequently normal, but its amyolytic action is sub-normal. (5) In pulmonary tuberculosis, even in severe cases, the quantity of the saliva is not lowered, and its ferment action is normal. Not until a few days before death is the quantity lowered, but even then the ferment action remains unchanged. (6) In chronic nephritis the salivary quantity is diminished and its amyolytic action not seldom abnormal. (7) In ascites the quantity of saliva is lessened, while the ferment action suffers but little change. (8) In long-lasting, debilitating diseases, such as scurvy, Addison's disease and diabetes the total ferment power is often diminished. In studying the ferment power of the saliva, the author has used an abbreviation of a method suggested by Jawein, for the purpose of selecting the saliva to be examined. After having the mouth of the subject thoroughly rinsed with water, the saliva formed by a moderate amount of sucking of the tongue was expectorated through a period of one-half hour and collected, the amount of saliva secreted in this time being from 15 to 25 c.c. For the purpose of estimating the diastatic power, two methods may be employed. The principle of the first depends upon the amount of sugar produced when a given quantity of saliva acts upon a given quantity of a standard starch solution for a fixed time at a given temperature—a pure potato starch, thoroughly washed and dried, being used in the preparation of the starch solution. The second method employed was that of Roberts, which consists in ascertaining the amount of starch solution, of known strength, which can be transformed by a unit of measure of the diastatic solution to the point at which it ceases to give a color reaction with iodine in a unit of time and at a fixed temperature, Roberts choosing, arbitrarily, as a unit of measure of the diastatic solution, 1 c.c., and as a unit of time five minutes. Both methods are given in detail by the author, each having been applied by him in numerous instances. In order

to avoid variations in one's results it is necessary that the saliva to be tested be collected through a uniform period of time, as that secreted through the first moments of stimulation is stronger in ferment power. Twelve cases are given by the author as having been experimented upon: One of leukæmia, six of chlorosis, three of chloranæmia, and two of pernicious anæmia; the results being as follows: In all the cases the specific gravity and alkalinity were normal. In the one case of leukæmia, both the quantity and the amylolytic action of the saliva were normal. In the six cases of chlorosis, four were normal in quantity and ferment power, one was normal in quantity and slightly deficient in diastatic power, one, the subject of acute bronchitis, being slightly deficient in both. Of the two cases of pernicious anæmia, the more advanced showed a very decided sialaporia, with no change in the diastatic activity; the other being normal, both in quantity and ferment power. The conclusion reached from these results is that anæmia *per se* does not give rise to any change in the ferment activity of the saliva, which is worthy of note.—*American Medico-Surgical Bulletin, April 25th, 1898.*

BRITISH DENTAL ASSOCIATION.—The eighteenth annual general meeting of this Association commenced at Bath on Friday, May 27th, with an informal reception given by the President and members of the Western Counties Branch. On Saturday morning about two hundred members attended the opening business meeting under the presidency of Sir Edwin Saunders, who occupied the chair, in the absence through illness of Dr. Theodore Stack, of Dublin. After the routine business, the chairman related a number of interesting and amusing incidents which had occurred to him during his prolonged term of practice, and then inducted to the chair Mr. W. A. Hunt, M.R.C.S., L.R.C.P., of Yeovil, who delivered his inaugural address. After lunch several papers were read, among others one on Dental Cysts by Mr. J. G. Turner. He maintained that there were held to be two possible origins of dental cysts: (1) from paradental epithelial remnants found in the alveolo-dental ligament, (2) as a sequel of a chronic abscess or breaking down of a granuloma. On both theories a septic inflammation due to a "dead" tooth was the starting point, and they might be referred to as the epiblastic and mesoblastic inflammatory theories. The results of investigations were in favor of the epiblastic theory. He had cut sections of seventeen cyst walls, and had found epithelium in sixteen. The seventeenth was a small swelling, and might have been only a quiescent chronic abscess. He had been able to trace the development of epithelial dental cysts from paradental remnants through (1) masses and cylinders of epithelium found in chronically inflamed alveolar dental ligament; (2)

epithelial reticula formed by growth and branching of masses and cylinders, and forming small tumors attached to roots—epithelial root tumors ; (3) definite small cysts attached to roots, containing a semi-solid mass, and lined by epithelium, formed by degeneration of the central cells and growth at the periphery ; (4) a fully formed dental cyst, lined by growing epithelium and containing a translucent viscid fluid with crystals of cholesterin in suspension. Epithelial root tumors were of common occurrence, and in one case columnar ciliated epithelium was found lining a cleft. In the case of a large dental cyst ciliated epithelium was also found, and in the walls were numerous irregular acini. A cyst of the gums was described, and the name "gingival" cyst proposed. It occurred at the site of a chronic discharging sinus connected with a "dead" tooth. The cyst was epithelial, and due to the growth of one of the glands of Serres. It was pointed out that both in dental and gingival cysts the crusts, the irritant, and the tumor were demonstrable. A dental cyst was connected usually with the teeth most commonly found carious ; its growth was progressive, but never caused pressure-pain ; it might inflame and suppurate, even long after the extraction of a tooth. It was a smooth non-lobulated tumor, hard or tense, fluctuating in its most prominent part, with crackling around, or fluctuations all over, with an edge of bone at the periphery, according to the stage of growth. Its contents were serum albumen, serum globulin (abundant), nucleo-albumen (small amount), crystals of cholesterin, but no fats or fatty acids, no mucus or true mucoid, and no reducing body produced by boiling with acids. In either jaw the cyst hollowed out the body, expanded, thinned, and perforated the compact plate, presenting chiefly on the outer side. In the upper jaw it might present in or push up the antrum. Dental cyst had to be diagnosed in the early stage from solid tumor, from chronic abscess, chronic empyema, and cystic disease of the antrum, denticular cyst, and gingival cyst. Exploration was urged. Difficulty of diagnosis occurred chiefly in the early stage ; pain and signs of inflammation pointed to chronic abscess, but the two processes might go on side by side in connection with the same tooth. Gingival cysts occurred in the muco-periosteum of the gum, outside the bone. The paper was illustrated by lantern slides of microphotographs prepared by Mr. Douglass Gabell.—*British Med. Journal, June 4th, 1898.*

DRAINAGE IN EMPYEMA OF THE ANTRUM OF HIGHMORE.—E. W. Roughton (*The Laryngoscope*, March, 1898) tells us the antrum can be opened and drained through the nose, through an empty alveolus or through the canine fossa. With many rhinologists the nasal route is the favorite method of draining the antrum.

The writer, however, uses the alveolar method of drainage almost exclusively. Even when the canine-fossa operation is likely to become necessary, it is advisable to establish an alveolar drain, because an opening in the canine fossa, although well adapted for cleansing out the antrum, is unsuitable for drainage. Should the teeth be sound, the drainage should be provided through the inferior meatus of the nose. The alveolar opening may be made with one of the different forms of perforator, or by means of a burr worked with the dental engine. The anterior buccal socket should be selected. It is possible to open the antrum through the inner or palatine socket, but it is also possible to perforate the floor of the nose by mistake. When the opening has been made, an efficient drainage-tube must be fitted and attached to the adjacent teeth. To be efficient, an alveolar tube should have a lumen of not less than an eighth of an inch, should be the proper length and should have a plug which can be inserted at meal-times. The tube should be of such a length that its upper opening is flush with the floor of the antrum. The length of the alveolar perforation (and therefore of the tube that is to be fitted) can be measured by means of a small *bougie à bouc*. The head of the bougie should be just small enough to pass easily into the antrum; on withdrawing it, the finger at once detects when the head impinges on the upper end of the canal. The thumb-nail being then placed on the bougie opposite the margin of the gum, the instrument is withdrawn and the length from the nail to the neck of the bougie carefully measured. The author concludes his paper, remarking that it is well to remember that all cases of empyema antri are not alike. In some the lining membrane secretes pus, but is not otherwise altered. These cases will be cured by drainage. In others the antral lining is so altered that it is incapable of being restored to the normal condition. For these curettement is necessary. There is yet another class of cases in which the antrum is not a producer, but simply a receiver, of pus, which has been generated in the frontal sinus or fronto-ethmoidal cells. In these cases recovery cannot be expected until the source of pus has been detected and efficiently treated.—*American Medico-Surgical Bulletin, April 25th, 1898.*

PERFORATING ULCER OF THE MOUTH.—Letulle (*La Presse Medicale, April 2nd, 1898*) records an instance of this rare condition in an alcoholic man, aged fifty-one, who presented fairly well-marked symptoms of tabes. The teeth in the left half of the lower jaw were all wanting except the central incisor, those on the right side being healthy. In the upper jaw there were only three teeth left, and apart from the persisting teeth the alveolar border was atrophied; on the right side of the upper jaw there was a cavity

involving the alveolar border and the hard palate, opening like a cone into the middle meatus of the nose. The mucous membrane lining it was pale, thickened, but not ulcerated; its sensibility was much impaired. The patient was not aware of this condition, but on being questioned he said that liquid food had for five months come through the right nostril. This lesion is rare; Baudet has collected eight cases chiefly on the subject of tabes. It may be unilateral or bilateral, but always occurs in the same situation. As to the explanation of the lesion, there are two views: (1) that of Galippe, that it is the result of alveolar pyorrhœa aggravated by tabes; and (2) that of Baudet, that it is an atrophic tabetic lesion due to the fifth nerve being affected, which begins by loss of the teeth and atrophy of the jaws, and sometimes terminates by ulceration and perforation into the antrum. The decision between these theories must be left to the future, but probably a combination of the two would be most satisfactory. At present only one case has been examined after death, and that very incompletely.—*British Medical Journal*, July 16th, 1898.

MOST of the special measures for the treatment of fractures of the lower jaw are not only difficult, but also, by their interference with cleansing of the mouth and drainage are not infrequently complicated by the formation of abscesses. Hausmann has devised an easy method that overcomes these objections, the fracture being treated on the principle of extension. A strong thread is fastened to the incisors of the jaw and carried over a roller at the foot of the bed, and to it a weight of from half to one pound is attached. This permits irrigation and drainage of any wound that may be present. The extension can generally be dispensed with at the end of eight or ten days. Eight cases so treated yielded perfect functional results without the formation of abscesses in any. For those exceptional cases in which all the front teeth of the lower jaw are absent, Seelhorst has devised an ingenious apparatus which fits in the mouth and under the chin, and to which the extending weight can be attached.—*Phil. Med. Journal*, June 4th, 1898.

VARIETIES OF DENTAL CALCULI.—H. H. Burchard (*Dental Cosmos*, Vol. XL., No. 1, 1898) distinguishes the following varieties of dental calculi: 1. Yellowish-white deposits found upon the buccal surfaces of upper molars. They are soft and friable. They dissolve readily in dilute hydrochloric acid with the evolution of carbon dioxide, and leave but little detritus and apparently no distinct evidences of an organic stroma, *i.e.*, they are largely composed of calcium carbonate, with a minimum admixture of organic material. 2. This class includes the calculi found upon the lower anterior teeth, opposite the ducts of the submaxillary and sub-

lingual glands. They are made up, in large part, of calcium phosphate, combined with mucin. 3. This variety comprises the small, dark, hard, scaly deposits found beneath the gum-margin, which excite the most common and most curable variety of pyorrhœa alveolaris. This calculus is at times associated with the first and second varieties. 4. The fourth variety consists of those small nodular calculi found deep in the pockets of pyorrhœa cases and upon the apices of the roots in cases of long-continued apical abscess. 5. This includes those deposits which are found upon the sides of roots in cases of gouty necrosis of the pericementum, and which exhibit in some degree a reaction to the murexid test. These deposits in their typical form are irregular and more friable than either the sublingual deposits or other root-deposits named. The bulk of the calculus is made up of calcium phosphate, a common associate of deposits of urates in other parts of the body.—*American Medico-Surgical Bulletin, April 25th, 1898.*

SALICYLATE OF SODIUM IN TOOTHACHE.—Dr. Frederick C. Coley (*Practitioner; North Carolina Medical Journal; Southern Clinic, June*) believes salicylate of sodium to be the best remedy in toothache arising from catching cold. A dose of fifteen grains will usually relieve the pain promptly, and if repeated every four hour the inflammation may entirely subside, leaving the carious tooth to be disposed of according to circumstances. Fifteen grains of sodium salicylate, with fifteen minims of tincture of belladonna, will often procure refreshing sleep instead of a night of agony. Dr. Coley's first experience of it was on his own person, and since then he has used it with many brilliant successes and few failures. It is especially valuable with children, where extraction of teeth is to be avoided, if possible, lest the development of the maxilla should be injured.—*N. Y. Med. Journal, June 25th, 1898.*

A SUBSTITUTE FOR THE GUM LANCET.—Dr. Wallan (*Alkaloidal Clinic, May*), in reply to an article by Dr. Love in that journal, urges that when irritation from non-advancing teeth occurs, it is because the normally flinty teeth, to which the soft gums can offer no practical resistance, are suffering from lack of nutrition. While admitting that the gum-lancet gives temporary relief and possibly faintly stimulates the local nutritive process, yet, since it supplies none of the lacking elements for which the child's system is so loudly clamoring, and transforms normal into cicatricial tissue, which is ten times as hard for the tooth to displace, it is radically wrong, an outrage to Nature, and an imposition on the helpless little sufferer. In place thereof the writer recommends correcting any faulty conditions in the infant's alimentary tract and placing it upon a mixture of the calcic salts, approximating the proportions as nearly as possible to those found in the teeth. For example:



Calcium phosphate, two parts; calcium carbonate, three parts; sodium phosphate, one part. Mix. Triturate to an impalpable powder. Direct: Three to five grains or more with other food, three or four times a day for a week, then once a day, p. r. n. The fluoride salt might be a desirable addition. In cases of anæmic children a trace of ferric phosphate is added. While wholesale condemnation of the gum lancet is as much to be deprecated as its indiscriminate use, like all the extreme views which come in waves over the profession, there is doubtless much practical sense in the course recommended by Dr. Wallan of nourishing the teeth.—*N. Y. Medical Journal, June 4th, 1898.*

TREATMENT OF ANKYLOSIS OF THE LOWER JAW.—Karl Roser (*Centralbl. f. Chir.*, Berlin, 1898, Vol. IV., p. 122) has had as a patient a man twenty-two years of age suffering for the past four years from complete ankylosis, caused by a severe bruise to the face. A T-shaped incision was made, and the condyle, after considerable trouble, incised. A mouth-gag was then introduced and the jaws forcibly separated, until a thumb could be placed between the front teeth. In order to keep the jaws from coming together again, a cork was fastened between the molars of the upper and lower jaws. A gold-plate, kidney-shaped and about the thickness of a ten-mark piece, was bent and curved so as to fit transversely in the joint. It was put in place and a deep row of sutures used to bring the tissues into close approximation. The skin was accurately sutured. After ten days the cork was removed and passive movements begun. One month after the operation the patient was able, by himself, to open the teeth  $1\frac{3}{4}$  ctm., and by using the mouth-gag  $2\frac{1}{2}$  ctm. were reached.—*American Medico-Surgical Bulletin, April 25th, 1898.*

TONSILS AND ADENOIDS AS CAUSES OF MALFORMED MAXILLÆ AND IRREGULAR TEETH.—Wm. A. Mills (*Jour. of Am. Med. Assn.* pp. 980-1, April 23rd, 1898) states that from observation of twenty-five years he has found that any inflammatory lesions in children of four to twelve years that obstruct the nasal or oral passages are the chief agents in causing malformed jaws and abnormal and alignment of teeth. A child of seven brought to him to have a tooth filled for relief of pain in right ear and right angle of inferior maxilla, was found to have almost complete obstruction of the nasal cavities; the face was pale, anæmic and haggard. A small cavity in a molar tooth was filled without relieving the pain. Depression of the tongue showed enlarged tonsils almost touching in the median line, from one of which pus flowed out on introducing the depressor, causing relief of the pain. The patient was sent to a rhinologist, who removed the adenoids

and reduced the tonsils. The child in six months was a bright, rosy-faced boy.—*American Medico-Surgical Bulletin, July 10th, 1898.*

THE DIASTATIC POWER OF THE SALIVA.—Within recent years a number of observers have claimed that the diastatic power of the saliva was found to be in a number of small round morphological elements. The authors, Bocci and Mosencchi, have been testing this, and come to different conclusions, *Arch. Ital. de Biol.*, Vol. XXVIII., p. 72. They centrifuged the salivary secretions and thus were able to separate the morphological elements. These they found had no diastatic action whatever, whereas the fluid portions acted in the usual manner. They thus believe that they have definitely settled the question that the enzyme is in solution.—*American Medico-Surgical Bulletin, July 10th, 1898.*

DENTAL HEMIPLEGIA.—The *Denver Medical Times* for May, quoting the *Virginia Medical Semimonthly* for March 25th, quotes the report of a case by Dr. J. D. Eggleston, in which hemiplegia was promptly and completely cured on the removal of a sound though sensitive "wisdom" tooth.

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### Tit Bits from the Editors.

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If the journals are not as good as we would like them to be, it is because we do not furnish the materials. They simply print what we utter. The publishers call for bread, and you give them a stone; you expect brick and you give them no straw.—*Register.*

THE dental journal is certainly the vanguard in our march of progress. Our dental literature has contributed more to the advancement of the profession, scientifically, than any other branch of the educational trio. It is as an outgrowth of its influence that we have the college and the association.—*Dental Register.*

FORTY-SIX young men were admitted to practice law in the province of Quebec the other day. The number is large considering that the profession is over-crowded already. But what is true of law is also true of the other learned professions. Hundreds of lawyers in the cities have hard work to eke out a living. Some one has said that the most dangerous member of a community is a half-starved lawyer. Whether that be so or not, the fact remains that too many young men are entering the professions and failure is the fate that awaits a goodly proportion of them. There is always room at the top, however, and it becomes after all a question of the survival of the fittest.—*Waterloo, Que., Advertiser.*

## Reviews.

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*Orthodontia, or Malposition of the Human Teeth: Its Prevention and Remedy.* By S. H. GUILFORD, A.M., D.D.S., Professor of Operative and Prosthetic Dentistry, Dean of the Philadelphia Dental College, etc. Approved by the National Association of Dental Faculties as a text-book for use in the schools of its representation. Third edition, revised and enlarged. Philadelphia: Press of T. C. Davis & Son, 529 Commerce St. May be ordered through any of the dental depots advertising in the DOMINION DENTAL JOURNAL. Pp. 254. Profusely illustrated.

The dental profession has received several very important additions to the literature of Orthodontia since Kingsley wrote. Almost coincidentally with the issue of the second volume of Farrar's monumental life-work, comes this new edition of the concise work of Guilford, an edition so much improved as to make its predecessors obsolete. The prevention of irregularity of the teeth, as well as its remedy, is to a large number of practitioners the *betwixt* of practice; and while apparent success is attained by rude methods, by injudicious extraction in ignorance of the physiology and dynamics of tooth-movement and the character of the tissues involved, there is no longer excuse for such imperfect practice. Any one who has acted as an examiner of students in orthodontia, must frequently have been startled by the fact, that among the greater number who could suggest methods of regulating cases set before them in clinics or in plaster model there was a general lack of scientific explanation. The author forcibly supplies valuable information in this respect in Part I., information which should be deeply ground in the mind and memory of the student. The combination of surgical and mechanical treatment has not kept pace with the slower methods. The experience in that direction of Dr. Bryan, Dr. Geo. Cunningham, Dr. Farrar, and Dr. Talbot are not by any means singular in their success. Failures recorded may have been due to the absence of aseptic treatment; but the author predicts that the slower methods will yet be largely supplanted by surgical methods. Those reported at the World's Dental Congress, in 1893, by Dr. Cunningham, of Cambridge, England, showed a measure of success to warrant more extensive practice.

A chapter might have been devoted to the evils resulting from malformed, misplaced, and movable apparatus, which are frequently more numerous than those to which the author refers, in those resulting from irregularity *per se*. Many practitioners, skilful in all

other departments of operative and prosthetic practice, are woefully deficient in the ingenuity which can devise for each particular case the best and safest apparatus. To regulate misplaced teeth, and to have as a permanent result destruction of the gingival margin, pyorrhœa alveolaris and other such consequences, is "paying too dear for the whistle." Our students decidedly need more thorough tuition in this important branch of study, and there never was a time when they were so well supplied with reliable literature on the subject.

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*Lehrbuch der Conserverenden Zahnheilkunde.* Text-book of Conservative Dentistry. Second edition. VON W. D. MILLER, a.o. Professor at the University of Berlin. Published by Georg Thieme, Leipzig.

The above work has been carefully revised and enlarged by the author. He has kept pace with the advancements and improvements made in dentistry since the publication of the first edition, and has given the profession the benefit of it in this. A very good chapter is given on Cataphoresis, also one on Formalin, Formagen and other similar new preparations. The last chapter of both editions is devoted to the treatment of deciduous teeth. This chapter is too short for this subject, and the author might have devoted a number of more pages to it. In other respects the book is well gotten up, and is all that can be desired.

C. E. K.

# Dominion Dental Journal

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## A FREE JOURNAL TO ONTARIO LICENTIATES.

The *Journal of the British Dental Association*, the *British Medical Journal*, and others we could name, are sent free each month to members of the associations which they respectively represent. The political advantage of these experiments is no longer in question. The journals have become the bulwarks and best defenders of the interests of medicine and dentistry, and the numerical strength of the associations has been largely increased. It is very apparent that the one hundred and eighty-two licentiates who, out of the many hundreds, paid the annual fee last year in Ontario, would be very greatly increased if some such consideration were held out to them. The payment of an annual fee is not popular, and why should it be when it is quite clear that a large percentage simply snap their fingers at all attempts at collection, and become unnecessarily antagonistic? Large numbers take no interest in the elections; they do not seek election themselves, and feel no interest in any ticket. They have paid handsomely to enter the profession, and do not care to be taxed for the benefit of others. Whether they are right or wrong, these are their opinions, and however complacently we may try to look at it, the fact stares us in the face, that a very large majority of the licentiates of Ontario refuse to pay the annual fee, and therefore voluntarily forfeit their vote. The difficulty is intensified when arrears have accumulated for several years.

Two thousand dollars more are being spent on the College building. Ontario has reason to be proud of the College, and no reason to grudge the disbursements in its connection. But it is only just to consider occasionally the wants of the licentiates themselves;

and it does not seem too much to expect, that out of the large revenue received, some way could be devised to supply free to licentiates in Ontario the only local journal we possess. If it is desirable to interest the members of the profession; to keep them informed of the doings of the powers that be; to take away any suspicion of cliquism or party pull—then it is desirable that every licentiate should be free of the annual tax and supplied with the JOURNAL. If these things are not desirable; if it is in the interest of the profession that we should have small meetings and minority representatives, and that a few enthusiastic members should bear all the burden and blame, then the present method is the best. The licentiates can speak for themselves.

### ROYAL COLLEGE OF DENTAL SURGEONS.

We again remind our readers in Ontario that the nominations take place next month (November), and the elections in December. While we have never attempted in any way to influence the vote of the licentiates, we feel justified in asking for more widespread interest. The services being rendered, and to be rendered, by the responsible officers are most important.

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