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DOMINION
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Original Communications.

The Story of a Quack.

By ARTHUR STIRTON, L.D.S.

An illustration of the change that has come over dentists and dentistry as to ethics, fell into my hands recently, and I thought it would point a moral for our younger men, who think that we are rather hard upon the advertising practitioner. Everybody knows that dentistry, like surgery, has nothing much to boast of in its origin, and it is no reproach to some in our ranks to-day, that in their early career they did those things which they would never do to-day, and which they honestly condemn others for doing.

A Mr. Howard, of George Street, Hanover Square, London, England, who obtained "the approbation and recommendation of Sir James Clark, Physician to the Queen; Dr. Locock, Physician to the Queen; Sir B. C. Brodie, Sergeant Surgeon to the Queen; Dr. Merriam, Physician to H.R.H. the Duchess of Kent; Sir D. Davies, Physician to Her Majesty the Queen Dowager," etc., etc., issued a small paper on "the loss of the teeth and the best means of restoring them." It was a fulsome puff for himself personally and his pretences, and sounded much like the quacks of New York and Chicago—I am almost afraid, being an Ontario man, to say certain places in Ontario. It was in the days of carved teeth, for which he charged five guineas a set, "the same as usually charged

ten guineas." He had his "patents" as well as his puffing, and, of course, "felt great delicacy" in presenting his ideas. He had "a new principle" for arresting the loosening of the teeth, and as to filling teeth, he said, "however small the aperture, it should be filled *with the succedanum* (!) without delay."

He inserted artificial teeth on plates over the stumps. He "invented"—these liars always invent, you know—"a new description of composition teeth." In fine, he was a fraud of the first water, and his memory is only recalled with abhorrence and contempt. It is said he made some money. He might have made much more had he chosen some other means of deception.

I wish I could reach the conscience of young dentists, who have deliberately chosen to sully their personal and professional character in the greed to "make money." It seems almost impossible to do so. They seem to have their consciences seared, and, to my mind, compose the criminal class of the dental profession. You, Mr. Editor, have zealously striven, ever since the first issue of the *Canada Journal of Dental Science*, to make us respect ourselves that we might be respected, and I know many of my professional friends, *including myself*, who were persuaded by your pen to become converts to a code of ethics. No doubt, you have made enemies, as well as grateful friends. Dental journalism in Canada, however, has this to say, that it has done Canadian dentistry a great service in leading the way in ethical reform; and if we find here and there a dentist who "glories in his shame," we must just put it down to the fact that the low and the dishonest are permitted to exist. What for? As a warning to the ninety and nine to avoid his example.

A Difficult Case to Diagnose.

By OLIVER MARTIN, L.D.S., Ottawa, Ont.

Some years ago Sir A. F. G. came to me suffering intensely from neuralgia on the left side of the face, extending to the crown of the head; his face was slightly distorted on that side. He had been treated externally and internally by his doctor, who came to the conclusion that it might be from his teeth, and I was recom-

mended. I examined his teeth carefully, and found no defect, no sensitiveness on tapping each tooth on every side. There were a few small gold fillings, but none that would indicate the cause. I asked him if he could locate the starting point; he said he could not. "Probably," I remarked, "you did not think of it." "No," he said, "it begins slightly and increases in intensity until it becomes unbearable." "Will you be kind enough to give this your attention, and let me know to-morrow the slightest indication of the locality from which it starts?"

The following day he came by appointment, and said he had discovered the pain to begin in the left cheek. This is all I had to go by. The small gold filling on the buccal surface of the first left molar attracted my attention. With the idea that it might be deeper than it looked, I took it out; the cavity was not at all sensitive. I again tapped the tooth; no sensitiveness. I was attracted by the shining appearance of the cavity and the hardness of the tooth bone, also that some of the other teeth had small portions of their edges broken off, which indicated high crystallization of the tooth bone. I began to suspect that the fine nerves of the tooth and teeth might be pinched by the rapid ossification of the serum that nourish them. Accordingly, I began to drill in the cavity in the direction of the pulp, and asked my patient to let me know at the slightest indication of sensitiveness. I soon got into the pulp cavity, and found it a small pearl. I continued to drill in the palatine root; when about a quarter its length my patient said, I feel that. I went no further in that direction, and inserted a drop of paste on a broach and stopped it up. Then the buccal roots were drilled into; the nerve canal in both was solid bone, and but slightly sensitive near the apex. They were treated in the same manner, the cavity filled with gutta percha, and my patient dismissed to call the following day and report. The hour brought my patient, and he told me he had a most comfortable night, and not the slightest pain had been felt since he had left my chair. The small but highly sensitive portion of the nerves of what had been left were now without life. The roots and the cavity were filled, when I told my patient if he ever again suffered from neuralgia to come to me. This he promised and thanked me.

This was a clear case of nerve ossification, as it has been termed, but only partially correct; it is more correct to say the ossification

or rapid crystallization of the serum that nourishes the bone; the nerves and pulp are nourished by the blood, else they would change into cartilage in too short a time. Why the pulp appears ossified is caused from an excess of serum (which is always thicker in aged persons, as in this case), enveloping the entire pulp and changing it into cartilage. This difficulty does not occur in young people, that is, the crystallization of the pulp by thick serum. Therefore it is well for the dentist to pay attention to age in hidden cases of neuralgia.

Notes on Alveolar Abscess.*

BY W. GEO. BEERS, L.D.S., MONTREAL.

I am well aware that there is perhaps no question in dental pathology which has been more discussed—some may say decided—than that of alveolar abscess, and were it not for the belief that "a thing is never too often repeated which is not sufficiently learned," a man who to-day presents a paper on this subject before a critical audience, may be supposed to have something new to say, or might, perhaps, be accused of an immeasurable degree of presumption.

When John Hunter wrote on "Gum Boil," about a century and a half ago, he described its origin and progress, and suggested as a last resort a not unpopular one to-day, extraction and replantation, another earnest plea for which procedure was made at the last meeting of the Dental Section of the American Medical Association. To Thomas Bell, over half a century ago, we owe the name alveolar abscess, as well as a vivid and original description, that might be palmed off on many a modern practitioner as a recent contribution to dental pathology. He traced the causes and progress; gave several good illustrated sketches of the first steps towards the formation of abscess; the different forms of the sac, and the effect in producing extensive absorption of the alveolus. What he did not know, chiefly consists in what we know as to the bacterial causes of suppuration and the therapeutics of the disease. That is, perhaps, a good deal, but we must not forget that he

* Ontario Dental Society, July 19th, 1892.

advised the use of leeches in the incipient stage before the formation of pus, the use of aperients, then hot fermentations in the mouth and cold applications to the face. His chief remedy, however, was extraction. I take the liberty of believing that his school is not yet extinct; and it is no wonder, for the third edition of Bond's Dental Medicine, the early editions of Harris', and in fact, almost every text-book a quarter of a century old, declared that chronic alveolar abscess was rarely curable except by extraction. Unquestionably, splendid progress has been made within the last few years in dental chemistry, pathology and therapeutics, but it would be a pleasant and profitable literary recreation to take a retrospect of the "Auld Lang Syne," if for no other reason than to discover how many a so-called modern principle and practice was then known, even if dimly known. Allowing for the vague and unapplicable use of terms and definitions in the time of Hippocrates—a matter in which we have still to reproach ourselves—it is surprising how keen was the diagnosis, if the therapeutics were not comprehensive, and what great advancement was made in an age when chemistry and physics were damned, and their prosecutors persecuted by the church, when dissection was interdicted as sacrilege, and the anatomist of the period was solemnly declared to be in league with the devil. No wonder the devil became popular.

With the knowledge we now possess of dental pathology, is not the term "alveolar abscess" as much out of date as "gum boil" was discovered to be by Bell? A dentist who would use the term "gum boil" in discussing true alveolar abscess, would be regarded as a sort of professional Rip Van Winkle; and it seems to me that the day is not distant, when the term we have been so long using to replace it, will be materially modified as insufficient to cover the varieties of the disease.

Alveolar abscess, to be correct in terminology, originates within the alveolus in the apical space. But there are many so-called alveolar abscesses which have their origin away from, and never enter this space. There is a wide difference between an abscess occurring in the apical space at the extremity of the root and an abscess on the side of a root as the result of injury. In the former the disintegration or death of the pulp precedes it; in the latter the pulp may remain intact. An abscess may exist with a live pulp in the bifurcation of the roots, and occasionally at the apex

of a palatal root of a molar, or at the neck of any tooth, originating from causes altogether outside of the alveolus. Dr. Black who gave the name "apical space" to the space between the alveolar wall and the end of the root, implies this distinction, when he proposed to call an abscess resulting from injury on the side of a root, *traumatic* alveolar abscess, or abscess from a wound, as we would speak of traumatic fever (fever consecutive to a wound), or traumatic hæmorrhage (hæmorrhage from a wound), etc.

A further objection may be made to the present vague use of this term. It bears no real application to the disease itself, as it does not even imply any direct or indirect connection with the chief tissue involved—the pericementum. Traumatic pericementitis or inflammation of the peridental membrane, as a result of injury, does not cover the ground, while the term apical periodontitis excludes abscesses which, like phagedenic pericementitis, having its origin at the gum membrane, may never reach the apical space, much less the alveoli. We know very well that until pyorrhœa alveolaris got its distinctive name, that too was frequently classed as alveolar abscess. There ought to be no complaint of attempting to provoke hair-splitting definitions in a desire to be exact; there should be distinctive terms to define abscess which occurs as the result of the death of the pulp, and abscess which exists with a live pulp. I cannot believe that an abscess could occur at the apex of a single-rooted tooth, without some injury to the apical artery, vein and vessels that enter the foramen. We know that such a condition may happen in the region of large arteries, but there is perhaps no place in the body more congenial for the development of abscess than the deep alveoli, with their divisioned septa, their strong inner and outer plates, with dense and diseased teeth implanted there, as if to present to nature and art every possible physiological obstacle. I might mention other reasons why the term alveolar abscess should not be made to include all abscesses in and about the tooth socket. *Apical alveolar abscess* occurs in the apical space from apical pericementitis. *Traumatic* alveolar abscess occurs on the side of the root from injury, while the abscess having its origin in either of these, and which reveals itself at some distance remote from the seat of the disease, either in the palate or the alveolar plates of either jaw, may be defined as *metastatic* alveolar abscess.

As I have only proposed to myself in this paper to refer to a few

of the notes in my record of thoughts and observations, it will be seen that I make no attempt to repeat the story of the origin and course of the disease, but merely to suggest here and there. A little fact—an instance of which I can present, in my own mouth, nearly twenty years old—may be here mentioned. We frequently find one sound tooth doing much more than its share of work, eventually suffering from pericementitis, and degenerating into pulp death without putrefaction, until it is exposed by caries to the atmosphere and the micro-organisms of the mouth. There may be acute pericementitis, induced by a pulp inflamed, and a pulp may die as a consequence. I speak of a perfectly sound tooth, free from caries. The cause of pericementitis here is entirely mechanical. By persistence this may after a long period degenerate into abscess. But if you want to produce one to order, open the pulp cavity, and leave it exposed to the air and the micro-organisms, which are ever ready to continue the mischief. It would be of deep interest to discuss several controversial questions here, but I confess I have not the time. It would be interesting to know whether the weight of evidence favors the theory, that the pathogenic microbes, many of which exist in the circulatory blood without causing disease, until some accidental changes happen in the tissue—whether or not these are always present in pus.

To my mind, Dr. H. Knapp, Dr. Black and others, have made it clear that there are living micro-organisms in all pus, and without their presence no injury will result in suppuration; that suppuration cannot be produced in their absence. It will be interesting here to give you a few lines I received from Dr. Black, in reply to the question, if his views had changed as to the statement that "there is no pus without micro-organisms": "My views are practically unchanged, and in fact have been more completely confirmed with further time and experiment. The discussion of the subject seems to have passed mostly for the present, since the great majority of investigations regard it as having been sufficiently demonstrated. We still see occasionally reports of experiments, undertaken with the view of demonstrating the formation of pus by the irritation of foreign substances; but it seems that the most that has been claimed lately is that a whitish substance, fluid or semi-fluid, has been obtained, that had the appearance, in some degree, of pus, but has not the quality of producing metastatic abscesses, nor

the general qualities or conditions seen in ordinary suppurations." I think this letter from Dr. Black covers the ground, and it is pretty certain that while pus from exudation obtained without bacteria, as others declare they have obtained it, contains the histological elements of pus ; it is free from the infective principle.

I have always made it a rule in searching for causes, to inquire if arsenic had been used in a tooth, the seat of abscess, for I have seen samples of the destructive process induced by its careless use, in adjoining sound teeth, by absorption at the neck, of an approximal cavity. Dead pulps, unlike dead men, do tell tales ; and I believe that the careless use of arsenic has contributed in no small degree to the death of pulps in adjacent sound teeth. It is wise, too, in diagnosis, whenever abscesses occur with unexpected frequency in the same mouth, to inquire if there may not be syphilitic or scorbutic taints. The syphilitic tooth we know, and the scorbutic teeth, are characterized by deficiency of phosphate in the cells of dentine and enamel membrane in their development, making the cells imperfect in shape and number, spongy gums, foul breath, general debility, pale countenance—when you find these associated with severe chronic alveolar abscess, you may pray that you may get inspiration, for materia medica and therapeutics will most frequently fail. The infectious character of the alveolar abscess is most marked in such cases, and the diseased conditions may result in general infection of the blood, causing septicæmia, or death from accumulation of pus. Pyæmia is more frequent than septicæmia, and may circulate itself from a diseased tooth through the blood or lymph to the general system. This important aspect of the question is worthy of special discussion.

Now that we know that pus-forming organisms infect the apical space in every case of alveolar abscess, the treatment is more intelligible. All salivary calculus, in the vicinity at least, should be removed ; all roots and teeth made aseptic. Pulp chambers of diseased teeth should be opened after the rubber dam is applied ; peroxide of hydrogen pumped into the canals until effervescence ceases. All instruments should be rendered aseptic, by heat or a solution of bichloride, 1 to 1,000. Dehydration, gutta-percha, chloral and eucalyptol ; gutta-percha cones ; painting gum with iodine and aconite ; antipyrin in 10 gr. dose, at bed time—that is all I just now think I know as to treatment.

When there is a fistula, we know that an abscess is easier treated; but if one opens on the face, it is better not to extract, if extraction is necessary, until you make an artificial fistula inside the mouth. The outside fistula will heal by granulation. If, on the other hand, you extract the tooth before you do this, the tissue will be depressed, and an ugly scar result.

In fistulous openings on the alveolus, a portion of the plate can be cut out or trephined, and the dead bone around the root, and a part of the root itself, cut with a sharp bur, and then washed with peroxide, packed with lint. Repeat treatment.

When the Connecticut Valley Dental Society met in Montreal, a few years ago, I presented a paper on the use of massage in the treatment of developing alveolar abscess. I gave illustrations (I regret I have lost them) showing the result in the hyperæmia or first stage of inflammatory process, or even when the gorged vessels were stagnated. I know it was not at all original, but I seemed to have then a monopoly of practice of the kind. It has recently been considerably discussed and approved. The massage was done with the finger, and the patients instructed in self-treatment. In all cases of alveolar abscess, it is wise to give the tooth as much rest as possible. It will better resist the action of pathogenic micro-organisms.

In conclusion, I must apologize for the many deficiencies in this paper, written at odd moments, from memoranda in my daily practice observations. Several times I threw it aside, and made up my mind to send an excuse; but I concluded that perhaps any feeble effort, which would provoke criticism, would bring out material that in itself would make you pardon my haste as well as my absence.

Proceedings of Dental Societies.

"What's the matter with British Columbia?" "It's all right!" Nevertheless, we have not yet received a report of the proceedings, or any of the papers of the last annual meeting of its Dental Association. That's all wrong.

Vermont State Dental Society.

The next meeting will be held in St. Alban's, March 15, 16, 17. A dental exhibit will be one of the interesting features. Visitors are requested to bring

Teeth hard to extract.
Teeth showing abrasion or erosion.
Geminous or attached teeth.
Necrossed bone or other effects of alveolar abscess.
Models and appliances of regulating cases.
Models of abnormal dentition.
Cases of crown and bridge work.
Specimen dentures of vulcanite, celluloid and metal, and
All appliances and instruments which may lessen the labor, or add to the perfection of our work.

The meeting last year was very profitable, and there is a certainty that 1893 will surpass it.

World's Columbian Dental Congress.

We regret that our space restricts us in the room we can give to the report of the Secretary of the General Executive Committee of the World's Columbian Dental Congress. Large additions have been made to the various committees. The following have been appointed foreign honorary officers for Canada: Honorary President, W. Geo. Beers; Honorary Vice-Presidents, A. C. Cogswell, Halifax, Nova Scotia; J. B. Willmott, Toronto; Honorary Secretary, R. H. Robertson, Portage la Prairie, Manitoba.

The membership will consist of legally qualified and reputable dentists (as defined in the Code of Ethics of the American and Southern Dental Associations) residing in the United States, and all foreign dentists regularly qualified by the laws of the countries from which they come, and such other scientific persons as may be invited by the Committee on Invitation.

Dentists in Canada who desire to acquire membership in the Congress, must file their application with the Honorary President or Vice-Presidents, who are empowered to pass upon their eligibility, in accordance with the ethics of Provincial Dental Societies.

The official languages are to be English, French, and German. Every contributor of $20 will receive the Transactions of the Congress if he does not attend, and if he attends and joins the Congress, his receipt for contributions shall be accepted by the Treasurer as full payment of the membership of $10. Every contributor of $30 or upwards shall have all the advantages of the contributor of $20, and in addition shall receive free the commemorative medal which will be struck.

Every contributor of $10 shall receive the Transactions if he does not attend, but will be expected to pay the membership fee of $10 in addition should he attend the Congress.

Accommodation has been provided in the Art Building, on the Lake front. The Congress will open on Thursday, the 17th of August, and continue until the 25th. In our next number we will publish the Order of Business.

It ought not to be necessary to repeat the advice to our confreres, to make arrangements to devote two or three weeks or more to the Congress. It will be an education, theoretical and practical, worth a hundred times the outlay.

Correspondence.

Help Ourselves by Helping the "Journal."

SIR,—I am sure there are not a dozen dentists in the Dominion who could not, at least, once or twice a year, send you a practical hint from their own experience. Most of them are too shy: some of them, as you once said, are "waiting to do something great," and so never do anything. We do not want sermons and addresses. We want scientific and practical articles, not too long. We want hints and notes, and ideas, and there isn't a man but could send them often. A good plan is to look over the laboratory and operating room, and see what little ideas of our own we have added to the general stock, and from time to time to jot them down. It is surely expected, too, of the doctors of dental surgery of our R.C.D.S. that they show us more of themselves in the JOURNAL. Brace up, young men. Yours, etc.,

HAMILTON.

Selections.

Things Practical in Dental Practice.

BY J. G. TEMPLETON, D.D.S., PITTSBURG, PA.

At the Ohio State Dental Society, Dr. Templeton gave an interesting talk on the above subject. Some of the ideas given were as follows :

Instrument Polisher.—Burnishers give better results when new than when tarnished, and it is essential to keep them finely polished. In fact, it is desirable to keep all instruments polished. An efficient device for polishing can be made by fastening a piece of sole-leather, or a piece of razor-strop, on a block of wood of suitable size, and placing a little diamantine powder on the surface of the leather ; then polish instruments by rubbing briskly on this surface. Diamantine is used by jewelers and can be obtained from them or from their supply houses.

To Make Moisture-Tight Gutta-Percha Fillings.—Take common resin and dissolve in chloroform to desired thickness ; place some of this in the prepared cavity, and by the time the gutta-percha is heated the varnish will be in proper condition through evaporation of the chloroform. The varnish should not extend to the cavity margins. Apply the gutta-percha as usual, and pack with cold instruments. The cold instruments do not adhere as warm ones do. When completed the filling may be pared off to the proper contour by means of a heated thin-blade instrument, and the filling smoothed by the application of eucalyptol or oil of cajuput.

To Duplicate Models and Impressions.—Take printers' roller composition, melt in a water-bath until dissolved. Grease the model slightly with lard, and place it the same as if to mould a metal die, cover with a metal ring (a tin can opened at both ends will do) and pour the melted composition over the model. Let this stand over night. By morning the material is hardened and the model can be withdrawn. The composition being elastic it retains its shape, and a hundred models may be poured if necessary. Impressions may be duplicated in the same manner, by using impression instead of model.

A Useful Clamp.—Where the lower teeth have short and tapering crowns and it is impossible to make an ordinary clamp hold, use the Lyder clamp, and you will be successful.

To Dry a Cavity before Filling.—After applying absolute alcohol to the cavity, use a solution of sandarach and ether to line the cavity ; dry this with hot air, which forces it into the ends of the tubules, completely sealing them ; then proceed with the filling.

In Ligating Rubber Dam, tie a small bead on the ligature, which, when tied around the tooth, will prevent the dam from coming over ligature ; the bead should be on lingual side of tooth.

In Articulating Teeth, always take an impression of lower teeth when making an upper set, and in taking the bite have wax trimmed to show the length you wish the teeth to be, and bite into it just sufficiently to show the tips of cutting edges and cusps where the model made from lower impression can be placed in proper position, etc. For double sets, make wax models for contour in restoration of features and to show length of teeth, and then try these models in the mouth, being careful to see that you have it right ; then make plaster articulating models for setting up the teeth, setting up the lower ones first against a plaster articulating plate, its articulating surface corresponding with the articulating surface of lower wax model, then lay aside the plaster articulating plate and put the model of upper jaw in its place, and set the upper teeth to the lower ones. I adopted this method about twenty-four years ago, and in that length of time have not had to grind a cusp off to let front teeth come together, and can say the same for the method of making an upper set alone, which is all due to the care taken to get a correct bite in such cases by taking an impression of lower teeth, which takes a little more time, but is all remunerated for in the satisfaction one gets from seeing that there is nothing more to do when the piece is placed in the mouth with masticating surfaces perfect, and no need of any "grinding in" to get the front teeth together.

To Prevent Plaster Adhering to Rubber Plates.—Coat the model with a thin solution of soap and water just before packing the case.

A Method of Securing Perfect Impressions for Partial Upper Plates.—To take an accurate impression of the mouth for a partial upper set of teeth, smear plaster over the roof of the mouth with

the finger, take a string about one foot in length, tie the ends together, put the tied end of the loop into the plaster on the roof of the mouth, and add more plaster to thoroughly embed the knot, leaving the loop of string hanging down. In placing the plaster in the mouth, care should be taken to have it come full half way over the grinding surfaces of molars and bicuspids and cutting edges of the front teeth, then trim the plaster and varnish the trimmed surfaces. The plaster should be so trimmed that it will fill up fully one-half of all spaces between the teeth, then cover all the remaining surface of the mouth and teeth with plaster, being very careful to have the teeth well covered and spaces filled in putting on plaster for the buccal and labial surfaces. When set, the plaster impression readily parts where it has been varnished, the palatal portion is dislodged with the help of the string used, and the pieces are then placed together and model made. If a tooth is irregular, use modelling compound about it and trim suitably; then apply the plaster. When removing it breaks where joined; then remove compound, place in position in the impression and pour the model.—*Ohio Dental Journal.*

Laboratory Hints.

By WILLIAM H. STEELE, D.D.S.

MAKING METAL DIES FROM PLASTER MOLDS.—Take the impression and make the plaster model as usual. When the plaster sets, trim and shape it as you want the metal die; cover the model with heavy tinfoil, making a perfectly smooth fit. Now lay the covered model on a piece of glass, tin side up, and cover it all over with plaster, from one-fourth to one inch thick, making it thick on palatine part, and thin on rim; especially if there is a good deal of undercut. When the plaster sets remove the model. If the rim breaks in separating, replace, and back up with new plaster mixed thin. This gives a tin-lined mold for casting in. Put the mold over the kerosine stove, and, when hot and dry, pour in the zinc or Babbitt metal. The metal should not be too hot when poured. In putting the tin on the mold, and in separating the model from it, care must be taken not to tear or puncture the tin. Smoke the die, or coat with whiting, and cast the counter as usual.

ARTICULATING LOWER PARTIALS.—When articulating to the upper natural teeth, but little trouble is experienced. Be very careful and make the bearing heaviest on inside cusps of second bicuspids, and first molars; see that the plate is not displaced in closing the mouth. In articulating these partials to full upper sets, is where the trouble comes. I have made a good many sets for pocket pieces and dresser ornaments before I succeeded in doing the work with sure results. I now make the upper set first, complete it, fit in the mouth, and if for a home patient let them wear the plate till settled to place. Now take the impression for lower partial; make cast, and trial plate; try the plate in the mouth and trim to fit. Wax up with spatula and dry heat, building wax on where the teeth are to go, for the bite. Put the dry plate in the mouth and let the patient close the upper teeth into the wax; now remove altogether in this position, and mount in the articulator. Grind and fit on the teeth, try in; you will probably find the articulation all right, but if you notice the slightest displacement in closing the mouth, correct it before you go any farther. I have used this method for twelve years with the best satisfaction to myself and patients.—*Items of Interest.*

Mechanical Abrasion of the Teeth.*

By JUNIUS E. CRAVENS, D.D.S., Indianapolis, Ind.

After completion, the crowns of teeth are subject to such modifications only as are destructive to contour. Aside from decay, these modifications are usually known as abrasions, and are classed as mechanical and chemical—so-called. This paper is devoted to a study of mechanical abrasion, because it is observable to some extent on every set of adult teeth that are in occlusion. Mechanical abrasion should not be confounded with conditions arising from blows, violence of sudden occlusion, as in snapping the teeth, or any of those accidental coincidences that crack and break away fragments of tooth-crowns. All modifications that should be classed as simply abrasions are accomplished by a gradual wearing away of the hard tissues of the crown, whether classed as mechanical or

*Read before the Ohio State Dental Society, December, 1892.

chemical abrasion. Usually, mechanical abrasion is confined to those parts of a crown that are, or have been, in occlusion with teeth of the opposing maxillary. Mechanical abrasion is essentially progressive, and presents three well-marked stages for consideration—each having characteristics that are well worth the attention of the practitioner.

PRIMARY ABRASION.

The primary stage is confined to the enamel, which is worn off in small, flat and highly-polished surfaces; consequently, in this stage, the abraded tracts are colorless and without sensibility.

Careful observation of cases as they occur in daily practice has led the writer to a recognition of the following propositions:

First: The primary stage of mechanical abrasion is the accomplishment of complete occlusion; and—

Second: Either condition is impossible without the other; therefore—

Third: The primary stage of mechanical abrasion is not detrimental to the use or tenure of teeth; to the contrary—

Fourth: It is essential to a proper and most effective exercise of the teeth in mastication.

It is much to be regretted that the process of mechanical wear of the teeth does not cease with the establishment of the primary stage.

When a tooth is erupted, it is then perfect—if ever perfect—in contour; and to be perfect in contour means to present certain angles and curves that render impossible that adjustment that must be mutual between teeth—that we style complete articulation—without some abrasion of the occluding surfaces. The practical impossibility of frequent, forcible contact of equally hard substances, without some abrasion of both, must always be considered in mechanical adjustments that are designed to be persistent. Dentists who fail to recognize and provide against possible destructive force of occlusion, primarily—emphasized by inevitable mechanical abrasion, secondarily—are certain to experience a liberal per cent. of failures in their operations.

SECONDARY ABRASIONS.

The secondary stage is produced by a continuation of the wear that begins with the first stage; but in the secondary the abraded

tracts are observed to have notably broadened, and are depressed centrally so as to appear as distinct saucer-shaped facets, sometimes attaining great depth; they are usually discolored—varying from yellow to a coffee-brown. It is characteristic of animal ivory, from whatever source, to become discolored by exposure to air and moisture, and general surface contamination; in abraded tracts on teeth it is observed that the deeper the discoloration the less the degree of sensibility; however, their effect often is only superficial.

When abrasion has progressed until the cusps have been reduced to their bases, the tracts of exposed dentine hang like sagging canvass from the enamel that has been left standing as an elevated rim around the exposure, as if for protection. This elevation of rims of enamel about abraded tracts constitutes a distinguishing and important feature of advanced abrasion, and should be noted.

Unlike the primary stage, the second involves two of the hard tissues of the crown in its destructive progress; in no sense is it essential to complete articulation of teeth; in fact, it often destroys established articulation and continues without discernable contact. However, the secondary stage, although undeniably erratic, marks a degree of progress in a transition by which man, in decline of life, comes to use his masticators much after the fashion of a goat.

Secondary abrasion is not altogether without redeeming features; it certainly admits of a more liberal lateral action of the jaw, facilitates prehension and accommodates retraction in occlusion. Further, as this stage does not obtain until the individual is nearly or quite fifty years old, it is largely instrumental, by virtue of a shortening of the visage, in giving to the features that expression of manhood or womanhood that so often is an index to the character, and that fixes itself indelibly upon us for good or evil, until the softening snows of the winter of life come to take away the settled look of business and cares; and then the man is old.

TERTIARY ABRASION.

In the third stage of mechanical abrasion, we discover the extremely worn-out condition of the teeth, so characteristic of old age, or, at least, beyond middle life. In many instances that which usually should be an articular surface, has been reduced to a single deep depression, touching—if at all—at the sides only; this is oftener observed in the cuspids and incisors. In many cases of

abrasion of the molars there remains of the grinding portion, the vertical rim surrounding the abraded tract and standing up in relief, while the central portion is occupied by an irregular ridge of enamel—the remaining evidence of grinding surface fissures. Here we have a practical completion of the transition referred to in closing observations on the secondary stage, by which man in the "sear and yellow leaf" is relegated to the herbivora; let us hope he may not become quite an ass. With the angle of his jaw nearly straightened, his teeth notably shortened by abrasion, the cusps of his youth worn entirely away, and circular and traverse ridges of enamel rising like those of the horse to perform the manual of mastication, we observe the "lean and slippered pantaloon" comminuting his food into meal with his teeth, instead of bruising and triturating it in saliva as in the days of his cusps; that which he can not chew he eschews, so that gradually he accommodates himself to a diet in which slops, eggs and tender vegetables predominate or dominate.

To the aged it is a blessing that they are enabled to manipulate a worn-out mechanism of mastication so effectually as to enjoy fair digestion. Thus we come to comprehend that although the tertiary abrasion is so disastrous to the teeth themselves, it renders perhaps reasonable compensation in enabling the sharp edges and ridges of enamel to meet the deficiencies of muscular weakness and impaired digestive power. .

Again, in the third stage, it becomes a matter for regret that the progress of wear of tissue may not be stayed; but the fact of continual wear here is as merciless as in the preceding stages; the crowns disappear, and the subject continues to chew—or thinks he does—after a fashion, with such poor stumps as may have been spared, until at last all are gone, and the edentulous gum of infancy is almost reproduced in "second childhood." Still the compensating kindliness of Nature is asserted, and the gums become so toughened as to prove effective in bruising such articles of diet as are appropriate to that stage of existence; an intimacy of the nose and chin is threatened, and the countenance of the individual whose "sands of life" are run so low, assumes the angelic expression of one who has realized the hollowness of life's ambitions and appetites, and fixes an expectant gaze upon eternity.

The density of enamel enables it to offer a greater resistance to

abrasion than dentine is able to do, otherwise the wear would be uniform, and the teeth would become flat and smooth, offering no advantages as grinders. The dentist should consider well the consequences to the patient in his hands, ere he proceeds to level up the saucer-shaped depressions in the grinding aspect of molars and bicuspids of the middle-aged or aged; likewise there is here a suggestion to be applied to prosthetic practice.

AGE ESTIMATED BY ABRASION OF TEETH.

In most cases the approximate age of a subject may be estimated by the stage of abrasion of the teeth. The first stage (enamel wear) is found as early as eighteen years, and even earlier. The second stage should be well marked at fifty, and often noted by forty years. The third stage (extreme wear) is nearly always apparent at sixty years. Habit often has much to do with abrasion, and an individual's teeth may thus be made to indicate much greater or less age than the fact.

Whether a problem is presented herein, or not, depends upon the "point of view," and some other things.—*Dental Register.*

Editorial.

Too Many Dentists?

It is but natural that a profession which deals with the most prevalent disease of the age, should attract the attention of young men in search of an opening for business. In some way it has become a popular superstition, that while dentistry is a hybrid branch of medicine, it is more easily attained and more lucrative. It would need more than an earthquake to upset any long-standing superstition, and dentistry will, no doubt, continue to attract young men, especially a large number whose chief ambition in life is to sail into its deep waters, even before they have learned how to navigate them. Medicine, in spite of its higher qualifications, is in precisely the same condition, and there are always a class of men in search of second-rate curriculums, second-rate examinations, and low fees. It is not the best education this class desire, but the

easiest entrance. Yet, medicine has had a better process of selection, and has better excluded those who are comparatively ignorant of a classical, much less a common school, education. Dentistry, for a long time, opened its arms to any man, even if he knew nothing of "the three Rs." Consequently, there are too many dentists of this class, if dentistry is to be looked upon as one of the learned professions. The hope of our profession is a higher standard of matriculation. It is perfectly safe to run any chance of the result of excluding from dentistry any man who has not education enough to pass a classical and mathematical preliminary.

A Hint to Secretaries.

Some time ago our friend, Dr. W. C. Barrett, expressed to us his surprise that the secretaries of our Canadian Dental Societies were so slow in supplying this journal with the proceedings. He mentioned the fact, that frequently the journals over the border received two or three voluntary reports of the same meeting. It ought not to be a very heavy task, first of all, to get as good a stenographic report as an ordinary reporter can make, and then for the secretaries to put it into shape for publication, erasing useless repetitions, and trimming the matter into readable shape. The papers read should be collected and sent to this journal with the report.

We appeal to the profession as a desperate resort. The Board of Directors of the Royal College of Dental Surgeons of Ontario was elected two months ago, and we have not yet received the names of the officers appointed. The brief report we published last month was a clipping from a Toronto newspaper. We feel it is about time that we should explain the reason why our Ontario reports are so meagre. This journal is chiefly the organ of the Ontario profession, because numerically there are more dentists in Ontario than in all the other provinces put together. But is there no way of waking up the many active men in its ranks? We want plain, practical articles; pointed, practical reports, and it is rather rough on the only journalistic representative in Canada that it has to cut its reports from old newspapers. Whose head the cap fits may wear it.

Reviews.

Dental Chemistry and Materia Medica. By J. S. CASSIDY, D.D.S., M.D., Professor of Chemistry and Materia Medica in Ohio College of Dental Surgery. Cincinnati: Robert Clarke & Co., 1893. 364 pp. $2.50.

The author has given dental students the outcome of his own experience of their wants. The work is divided into three parts, with a view to the convenience of the three graded classes, which are required by the Association of Dental Faculties. The work has been prepared distinctively for dental students, and will greatly assist them.

The Angle System of Regulation and Retention of the Teeth. Third edition, revised and enlarged. By EDWARD H. ANGLE, D.D.S. Wilmington Dental Manufacturing Co., Philadelphia. 51 pp. 75 cents.

An illustrated brochure, giving a full review of the handy methods by which Dr. Angle treats all cases of irregularity of the teeth.

Methods of Filling Teeth. An exposition of practical methods which will enable the student and practitioner of dentistry successfully to prepare and fill all cavities in the human teeth. By RODRIGUES OTTOTENGIN, M.D.S. With 236 illustrations. Philadelphia: S. S. White Dental Mfg. Co., 1892.

It will be observed, from the above, that this work promises a good deal, but we must confess that we entertain serious doubts if any exposition of any practical method will "enable the student or practitioner of dentistry *successfully* to prepare and fill *all* cavities in the human teeth," and the inference presents itself that the author's confidence in himself is, to say the least, unbounded. That is not, however, one of the faults which time cannot remedy. A large part of the work appeared originally in the *Cosmos*, and was freely criticised as possessing a little too much claim to operative infallibility, but in many respects it is a very interesting contribu-

tion, and while in many parts of an elementary character, containing facts well known to the average student, yet it is well to repeat what is apt to be forgotten.

The publisher informs us that "the book is not intended to be a cyclopedia of operative dentistry; does not aim to be considered a repository of all available information in that broad field, and in that view it may perhaps appeal but feebly to the intelligence of those who are in the front rank of operators.

"Its real aim is to describe in clear, plain language, practical, successful methods of filling teeth under almost all circumstances, for the benefit especially of those whose experience has not covered all the phases of dentistry. This is the standpoint, as indicated by the author's preface, from which its teachings should be judged."

We must dissent from the statement that "the main reliance for the salvation of teeth which have decayed must be upon gold;" also, that "the only excuse for using porcelain is the hope of matching the tooth in color; this is only accomplished by accident; it becomes impossible to bake porcelain specially and produce a desired shade. This alone is enough to make the method disappointing, if not worthless," etc. Granting the porcelain inlays are not yet perfected, the public expect from dental artists some progressive improvement upon the barbarian exhibition of great masses of gold in conspicuous places. Unquestionably, we are moving in that direction, and we look forward to the day when one of the occupations of the coming dentist will be in removing these gold masses to replace them with porcelain, and works on operative dentistry, condemning porcelain and extolling the sacrifice of enamel and the pounding in of gold, will be placed among the curiosities of dental literature.

That, however, is no reason why, in the meantime, the work of the author should not receive a welcome from the profession.

Annotations.

Up to this date, proper sterilization of all cavities to be filled, seems not to have been sufficiently insisted upon. We live in an age of antiseptics and germicides, and those who ignore their efficiency deprive themselves of agents of the utmost value. Proper sterilization of cavities requires the agent to be seated in the cavity an ascertained length of time. To do this most effectively, most cavities will require preparation at one sitting, and the insertion of the filling at another.

* * *

In my opinion, the treatment of acute abscesses should be relegated from the office to the patient's house, and regular visitations made by the dentist during the continuance of active inflammation. Dr. L. A. Faught, in *International Dental Journal.*

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Dr. Faught refers to the use of the clinical temperature thermometer in dental practice, and gives a record of cases. This has been in use for many years among practitioners in Canada, and, no doubt, elsewhere, especially in diagnoses of abscesses and diseases of the gums. In its use, previous to the administration of nitrous oxide gas, it was found invariably that the very act of using it increased the temperature, and gave undesirable alarm in nervous patients, the same as the display of extracting instruments.

* * *

From the report of the American Dental Association, in the *International*, we learn that there are thirty-eight dental colleges in the United States. The number of graduates in 1891 was 1,241, in 1892, 1,483. The average in the last seven years is 904 per annum. The superfluity of many of these colleges was well demonstrated last year, when attention was called to the fact that it required the strength of fifteen colleges, more than one-third of the number, to graduate less than 100 students ; eight more turned

out 150, while twelve colleges out of thirty-three graduated more than three-fourths of the entire number. Two of the new colleges have held no commencement. It required this year the force of fourteen full-fledged colleges, with their equipments, faculties, etc., supposed to be perfect, to graduate ninety-one students, an average of six and one-half each. In fact, eleven colleges together graduated fifty-one students. There are now about 130 local societies in the United States, with an aggregate membership of nearly 5,000.

CLEANLINESS IN DENTAL PRACTICE.—"In the first place, we must be clean about our person; a fine suit of clothes and clean linen will not fill the bill; our person must be clean. If we take manual exercise as we should, we must bathe often enough to keep a sweaty smell from our body. It is important that the breath should be watched; it is awful to go to work over a patient with a foul breath. If we use tobacco, limit the use until after office hours. The hands should be kept soft and clean, and our patient ought to have the satisfaction of seeing them washed the last thing before going to work. Now, it is not necessary to go through a lot of red tape, and do it in a sort of 'Miss Nancy' way, rather do it as a matter of course, and in a business way. Then, the office should be kept in the best of order, and clean as the parlor of any patient we wish to do business for. The instruments should not only be clean, but look clean; if they are nickle-plated, it is an easy matter to keep them looking nicely, and it should be done. Enough of this! We all know the importance of cleanliness in the dental office.—*J. L. Sweetnam, D.D.S., in Dental Register.*

THE temperance people of Chicago have the courage of their convictions, anyhow. An offer of fifteen hundred dollars a month rent was recently made to them for the right to put a gilded palace, in which to sell tobacco, in the rotunda of their marble halls in the Temperance Temple. But Mrs. Carse answered: "Admit the vile weed into our temple of truth and purity? Never!"—*Dental Register.*