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J. B. WILLMOTT, L.D.S., D.D.S., M.D.S.

DOMINION DENTAL JOURNAL.

Vol. II.

TORONTO, JANUARY, 1892.

No. 1

Dr. James Branston Willmott.

We are quite certain that no one will be more surprised to see his counterfeit presentment in this Journal than Dr. Willmott himself; but we need not say that it is a very great pleasure to us to be able to give our readers the portrait of one who has no peer to-day as a real hard worker and representative dental educationist in Ontario.

Dr. Willmott was born in Halton Co., Ontario, June 15th, 1837. His parents came to Canada from England when quite young. After living a few years in Toronto (then called Little York), they removed with their parents to the central part of Halton County, where they did, faithfully and well, their part in converting the wilderness into a fruitful field. Dr. Willmott had the good fortune to spend his early years on the farm: obtaining his education at the public school. In 1854-55 he was a student at Victoria College, intending to take the University Course in Arts, but he was prevented by failing health. In 1858 he entered the office of Dr. W. C. Adams, as a student of dentistry. In 1860 he began practising in the Town of Milton, near his birth-place. He allied himself with the Liberals in politics from profound conviction, and naturally made foes as well as friends, but no one ever doubted his honesty. He took an active interest in the affairs of the town, and was soon called to a position of trust. In 1863 he was appointed a Justice of the Peace. Besides minor offices he was for three years a member of the Municipal Council; two years of that time,

Chairman of the Finance Committee. In 1870 he attended the Philadelphia Dental College, graduating in March 1871. Although a foreigner there, he was chosen by his classmates to deliver the Valedictory on "Commencement Day." In July, 1871, he removed to Toronto. In 1876 he was actively engaged in the movement, to place the Dental Profession of Ontario on a better footing, which resulted in the incorporation of the Profession as the Royal College of Dental Surgeons, of Ontario. In 1870 he was elected a member of the Board of Examiners, and, on the organization of the Board, its Secretary, and was re-elected each triennial election. In 1875, the dentists of Ontario met in convention and adopted a resolution requesting the Board to establish a Dental College in Toronto. The Board requested Dr. Willmott to undertake the organization of the College, associating with him L. Teskey, M.D., M.R.C.S. The first session opened in 1875, with Dr. Willmott as Senior Professor, occupying the Chair of Operative and Mechanical Dentistry, which position he continues to hold.

The Doctor is a devoted man in church work. Born of Methodist parents, he, in early life, became a member of the Methodist Church and has filled nearly every office open to a layman. Soon after settling in Toronto he connected himself with the Metropolitan church, and has been deeply interested in its prosperity. He now discharges the duties of Bible-class teacher, leader, trustee and treasurer of the Trust Board, besides being local treasurer of several important conversional funds; was a member of the Toronto Methodist Conferences in 1885-86, and of the General Conference of the Methodist Church, which met in Toronto, 1886. In September, 1864, he was married to Margaret Bowes, niece of the late J. G. Bowes, ex-Mayor of Toronto.

To Dr. Willmott's untiring energy the Profession of Ontario owe the proud affiliation with the University of Toronto, and the fact that the first degree of D.D.S. ever conferred in the British Empire was conferred at the April meeting last year. No man can occupy prominent positions in any profession, without being misjudged. Any man who succeeds in satisfying everybody may make up his mind that his work will not endure. Dr. Willmott has had to face many difficulties and some of the prejudices which are sure to meet every pioneer, but he has faithfully served his generation, and has given a stamp to dentistry in Ontario, which no honest practitioner would like removed.

Original Communications.

Combination Fillings and Eclectic Practice.

*By W. R. PATTON, D.D.S., Cologne, Germany.

The following was read before the A.D.S. of Europe, in Baden-Baden, in 1878, and I am happy to say that the views expressed then, have worked their way slowly to the front, and to-day are known under the popular title of "Combination Fillings." We have arrived at this result through an enforced eclecticism in our treatment of teeth, by grasping at, and making use of every material offered to us, in our vain efforts to prevent decay, and preserve the organs confided to the care of our experience. Ten years is a fair time in which to decide the important query: Have we gained greater knowledge in this time to enable us to save more teeth than in 1879? Are more teeth saved, comparatively, to-day than formerly? Let each individual practitioner ask himself these questions, and answer them for his own satisfaction.

Every man knows where he has failed, so let him try again, and try something else than that in which he has failed, and find out new results as beneficial or otherwise, until he develops a natural eclectic knowledge of the manner and material he will use, according to the case. This can only take place with surety when the patient is a regular visitor, and one has time to note the permanency of the filling material used.

My experience of the last ten years, with, as a general rule, a bad class of teeth, is that the Combination-filling is the most permanent, and they have been as follows: Gold and amalgams (gold and cement), amalgam and cements, tin and amalgam. You will wonder at my not including tin and gold. The simple reason is, that after experimenting quite a time, I finally came to the conclusion, through results, that gold and amalgam had the same effects with a more perfect possibility of manipulation.

*I merely wanted to demonstrate by reading this paper (written ten years ago), that the present system of combination fillings, which is being so much advocated now in American Dental Journals, is nothing new, but has been there before and the system followed for years here in Europe.

I hold the oxychloride cements, and the oxyphosphates, as the acme of filling material, if it were possible to prevent their erosion, and in so many cases chemical dissolution; but herein comes the eclectic point—combine! Why should a deep cavity be entirely filled with gold, or even amalgam? It has been, or is, my prevailing practice to fill in 95 cases with cements, and cap the cavities with gold, amalgams, or both combined.

No operator can make as close a connection with the walls of a cavity with any non-adherent material, as he can with the plastic advantages of cements. A child could learn it!

Let the operator use his skill in preparing that cavity, with as little loss of material as possible, and he will find the filling of it in this way, child's play. Let the cement be capped to defend it, and you have a constituent underneath which holds the parts together, and here let me add, that cements should not be used too doughy, but soft and sticky, so that they will stick to the walls of the cavity and adhere there. Let the same care be used as in the use of all gold above, and the result is better. Take a so-called shell, merely the enamel coating so to say, standing as a ruin, carefully scrape the soft layers of dentine away from the interior, and plaster it up and around the walls with quite soft cement; let it dry and harden, then repeat, and leave enough room in the centre for anchorage, and carefully take away the cement from the margins and root-edges, and cap nicely over with *soft* amalgam. I say *soft* expressly. Soft amalgam does not, in my experience, contract as much as *dry* or hard-pressed. The shell will not discolor, and the work will do good duty for even longer than the most sanguine could expect.

The combination of gold and amalgam is, according to my experience, one of the best filling materials we can resort to. The combine appears to benefit each other in a preservative sense. Dentine, under this combined material, does not give way, as in the use of each separately; if this depends on a galvanic or electro-development, I leave to science to determine. I can only vouch for resulting facts, and those benefits. My principle is to fill with gold wherever that part of the tooth is visible, to evade darkness of color, and fill in the rest with amalgams, of qualities according to case. For example, a proximate-cavity in a central incisor—The labial surface from underneath with gold and the lingual with amalgam; when polished later, you have the appearance of a gold-filling from the superior side, and the inferior dark but invisible.

The same treatment for bicuspid. The buccal surfaces with gold, and the lingual with the gum margin, with amalgams. If the teeth are hard, use hard amalgams, containing (or supposed to) more silver and some gold. If the teeth are of a soft character, then amalgams of tin and copper amalgam. I could enumerate innumerable cases where combinations are of value, but I have taken up too much of your time, and will close with the hope of hearing later of still greater development in this direction, when a *false shame* has been conquered, and practitioners will own up to having *patched up their own failures*, and even by that means preserved teeth, comparatively, for the suffering patient.

When the time arrives when Dental magazine recorders will give us their real daily practice, and not rush to press with the *extraordinary*, I fancy more benefits will be gained by our fraternity at large, than that of competing with the yarns of the angler, whose reputation is so unenviable.

Failure leads to success, and nothing succeeds like the latter.

“Among the disadvantages of a young man of our profession, when writing his ideas regarding any of the many subjects inviting close attention and subsequent thought, stands predominant his fear of being looked upon as conceited, and his crude observations be lost on his hearers, under the damping verdict of inexperience. In this connection I must plead guilty to a feeling of depression when noting the few remarks I have to make on this subject—and which I have consequently made as concise and unobtrusive as possible—through the fear of being gobbled up by some distinguished scientist in dental theory, to detail the conditions of the fluids in mouths where I would fill teeth in a certain way; whether the exciting causes of caries in these cases might be *chemical, vital, chemico-vital, parasitic-electric or galvanic-electric*, etc., which is exactly what I am thoroughly incapable of doing, and when I read—to quote the language of a prominent writer, that “the pulp-vessels should be charged with negative electricity, the normal pulp with positive electricity, but, in a pathological state, the surface of the dentine as well as the roots would be charged with negative electricity,” etc., my nervous system receives an electric shock, which pervades me with an indescribable feeling of meanness when I recognize that *I* cannot discover the exact state of the tooth I am to operate on, in this connection, so as to arrive at that great goal—the *infallible filling*.”

The writers on the *electro-chemical action*, and all the other theories, having discovered the enemy, shouted—and how have they shouted, *an alarm!*—do not retire and arrange as practicable a specific defence as possible in the first place, and then, secondly, an attack against the encroaching foe, but are so entirely dismayed at their own discovery, which they so diligently impart, nevertheless, that confusion arose in the main body to which they belong. This, in its turn, panic-stricken as it were, immediately divides into factions of extremists. Thus, weathering the general defence—and we all know that a party divided in itself must fall—such appears to be the state of affairs amongst us since an eminent practitioner and others discovered the undermining enemy and retiring in dismay—returned, bearing their horns before the hitherto strength of dental practice, expecting the walls of the most progressive specialty of the century—walls founded in gold through educated ability—to crumble away as the walls of biblical history, in order to be built anew in plastic materials.

Those who run into one extreme are accountable for the folly of those who run into a contrary—so the printed words of Dr. Flagg, in vol. 20 of the *Dental Cosmos*, 1878, where he states in italics:—“I have not used one sheet of gold-foil for almost two years, and have sailed for the last seven months with ‘no gold used’ on my appointment cards”—is an extreme statement from a gentleman of his capacity and position, liable to have caused, and ‘to still cause, an indefinite amount of corruption in the core of our profession, particularly among younger members, who look up to and expect to learn maxims of wisdom from men of such experience.

We must always appreciate the electro-chemical theory, if only that it has drawn the attention and skill of the “gold-or-nothing” operator to the value of filling teeth with something other than gold. The relative work of the experiments made to demonstrate the electro-chemical theory is yet far from being open to objection. It may be conducive to dental science to experiment in the laboratory, but I do not think such experiments are conclusive, when we consider the innumerable changes in the fluids of a living organization, besides the changes in temperature in the oral cavity (F. 98°6' natural), which cannot be directly recognized in every case so as to diagnose the best practical result. I believe it impossible to obtain the same conditions out of the mouth as in it; the destructive agents used out of the mouth always affect the enamel

most and in the mouth affect it least. When distinct rules are given (if that will ever be possible) through such experiments, to repel the ravages so easily discovered, but not more easily combated to-day than previously, then will I become also an extremist, and lowering my flag to Dr. Flagg, shout: "*Le roi est mort—vive le roi!*"

Any man with ordinary common-sense (and this kind of sense is anything but a common virtue) has filled and fills teeth in his attempts to resist decay, in the same manner as the original "new departure system," though he does not throw such an important filling-material as gold is in educated hands, at the same time overboard—thousands of teeth can be shown, most effectually resisting further decay through gold, and thousands also can be shown where other materials, plastic, etc., are effectually doing the same purpose.

The total condemnation of one material or another can only be founded on bigoted error. Gold, in *certain* places, is the best of filling materials; amalgam and other plastic preparations, in certain cases, are as "good as gold;" whereas, in other certain cases, amalgam and other plastics are of use to the dentist, where gold is a "delusion and a snare," and still in other varieties the plastic is better, in fact the best of all materials, but in connection with gold, so that we see without the one or the other we are literally nowhere, and where that is—as Dr. Atkinson would say—"only God-Almighty knows!"

The prevailing eulogism, "he is a first-class operator," refers only to a man's capacity to use gold, and has kept hundreds of first-class men, through the exclusive mechanical use of this material, from devoting their energies to a development of other substances of as great a value to dental science—besides evading the mental strain and physical exhaustion suffered by the patients, and especially by the operators themselves.

Speaking with a N. Y. dentist, of reputation as a conscientious operator—who was travelling to build up a broken-down constitution—in a conversation on this subject, he replied to one of my queries, "Why am I done up, simply by the wear and tear of a first-class operation—by putting in difficult fillings in inaccessible places?" As to my query, "Why," he replied, "I must keep up my reputation!" I may have observed that he, in addition, made a remark to the effect that he had "conscientious doubts if the work

he gave so much labor to could not have been done sooner and better otherwise."

Has not this same idea, carried out, been for some years the cause of keeping active minds from other means and remedies, which could have allayed much physical suffering to our patients, even under mere manipulation, and kept the operators themselves from a more extended and accurate observation of other filling materials? The tendency of this paper is not in any way that of gold *versus* plastic; but I cannot evade putting the question, "Have *plastic* fillings had the same trial, *in all cases*, in the same manner as gold? Would not plastic fillings probably show as good an average of *benefit given*, if their use was not always to a great extent considered *derogatory*, and principally used when we could not use anything else?" If certain plastic fillings are resorted to for frail and diseased organs, in order to save them, can we not logically reason that they will save organs that are otherwise, comparatively speaking, strong and hardy?

If we take the two most prominent filling materials now in general use, Gold *versus* Amalgam, the former used through educated hands, the latter through uneducated use, then this difference, notwithstanding, and principally on account of the want of a general educated use of both; I have no hesitation in saying, that, as many or more teeth, though often unsightly, have been preserved to their owners through amalgam than gold.

Is it necessary that patients should regard such plastic fillings as *inferior*, and that an operator fills a cavity with the poor (?) article in order to *save* it, at the same time informing his patient that it is "not worth gold," and time shows the frail organ still on duty; while a neighboring effort that caused much more patience and energy to deck in glittering garment of gold, must be patched up, renewed, restored, or something of that sort. And with what? Generally with amalgam—the poor cinderella of filling material! Is it not true that, for the proud privilege of being first-class and doing everything in gold, labor and time are sacrificed when certain definite kinds of teeth, and certain definite cavities in teeth, could be better manipulated with another material.

Inefficiency and unskillfulness need not be attributed to those inserting plastic fillings, for where the more conscientious effort is smiled at, the more successful will be the results attained. When and where to fill, what to use and how to use it, are the principal

points demanding judgment of an educated dentist. Extremes have ever proved valueless, but by listening to the arguments of both sides, he, by civil observation, proves the safest man, who accomplishes solid enduring work by an eclectic use of that which is good, or seems good, to his understanding.

After these few, and I hope, concise remarks, I will state where, in my opinion, there are places where plastic work is superior to gold as filling material; under plastic, I consider amalgams, gutta-percha, pure; and in its various combinations with other substances to harden it; Paul, Sons & Rastaing's cements first, and those under other names secondly.

About the first opportunity I would find when I would look around and think of what I could best use for my purpose, and in the hope of doing something permanent towards a probable successful result, would be, when I have cavities to fill which are *difficult of access* (here the cavities were demonstrated on the blackboard). According to case, amalgam and gutta-percha. Then dilapidated teeth "not worth gold?" Cement here is nearly useless, most every one understanding what such cases mean.

Young patients with perceptibly poor constitutions—teeth frail and badly decayed: gold and amalgam, tin and amalgam, gutta-percha. Teeth of defective tissue, called "chalky": gold and amalgam, tin and gold (amalgam in combination with tin, which latter should be laterally pressed to the walls of the cavity between the amalgam and dentine).

The deciduous teeth, when amalgams, gutta-perchas and cements are mostly preferable to gold.

Soft teeth, where one simply diagnoses that fillings of any kind are least likely to preserve, do. do.

Large-crown cavities, with only enamel walls standing, fill with cements and capped with gold, tin, or amalgam.

Cavities in teeth far below the margin of the gums, in every case with amalgam; if portions protude over margin and look dark, cut away subsequently (when hard) and replace top portions in gold.

Woman's teeth, during pregnancy, on account of softening of substance and later replacement.

Teeth of nervous persons of weak organization, incapable of supporting any lengthened operation.

Those cavities on the necks of teeth, where plates having been upheld by pressure of margins or thorough clasps, we find enamel

dissolved, and underlying dentine generally softened to a gelatinous condition: amalgam and gold, and amalgam and tin and gold.

Front teeth, for sake of appearance, where too large fillings in gold, or any other metal, serve to draw the attention of the public to the defective state, inlaid portions of porcelain teeth, Rastaing & Doulson cements, Davis' gold (a gold formerly used, of a very light straw color); and finally, I would fill with amalgam and the other plastic materials, where I thought they could be of use, to suit the cavities in those teeth—abounding so numerously in the mouths of "poverty;" in those cases, gentlemen, good deeds in amalgam are better than gold, when you have no time to afford the latter for sympathetic charity.

These are a few of the conditions and places where I conscientiously would prefer plastic fillings as superior to gold. Where one evades the necessity of taxing the patient and himself to a complete exhaustion, through operations in gold of unusual magnitude and extreme length, and which often finally leave a doubt—a cringing doubt in the minds of conscientious men, if he has really benefitted his patients in accordance with the Hercules-like manipulation necessary to such work.

The dentist may earn his bread by the sweat of his brow, but I do not think he is justified in making his patient the victim of unnecessary suffering, and then sweat his purse for the sweating undergone by both.

If the teeth of civilization are yearly degenerating, then more means must be sought, for resisting their decay, than the sole mechanical use by one material, viz.: gold, applied in all cases and conditions.

If we aim to relieve suffering and prolong the use of organs necessary to a healthy being, then searching for cause and observing effect, we must break the bands of established usage and teaching and treading our way over new fields of extended and accurate observation, we may arrive at a goal, where we will find that our efforts in "plastic" models for the great monument "Preseveration," may later be petrified into the permanent marble of success.

Choice of Material for Filling.

BY W. A. BROWNLEE, L.D.S.

This subject is one full of interest to the operator and importance to the patient. In considering the subject we must take it for granted that the patient has put himself into our hands for treatment: expecting the dentist to perform such operations as are necessary, with the greatest skill, and by the use of the best filling material.

In general practice our hands are often fettered by either the economy or choice of the patient, and to this we may attribute many failures in filling which might have been obviated had the choice of material been left to the superior knowledge of the dentist.

We have no filling material to which we can apply the name "Perfect," and, therefore, we must select from such as we have, the most suitable for any given case, or particular class of teeth, considering also the condition of the cavity to be filled.

To merit the name "Perfect," a filling material should be the same color as the tooth to be filled, a nonconductor of thermal changes, easy to introduce, easily adapted to the walls of the cavity, capable of resisting the dissolving power of the fluids of the mouth, capable of bearing the same amount of pressure as tooth tissue in the same position, should adhere tenaciously to the walls of the cavity and not shrink, should not be liable to cause any physical disturbance, and capable of taking a high polish.

In order to choose a filling material we must first ascertain the condition of the tooth to be filled, the position of the cavity, and conditions of the fluids of the mouth.

Teeth are either temporary or permanent, and all teeth of either sets may be included in two classes: 1st, hard, dense, or well calcified teeth; 2nd, soft teeth: which will include such as are deficient either in lime salts or animal matter. The deficiency in the latter class is due to causes which prevent the deposit of the required amount of inorganic matter in the teeth during their development, or its proper assimilation. These causes are various, the principal of which are disease, improper food, and hereditary

predisposition. The advisability of filling children's teeth cannot be disputed as the fact is clear, that if the teeth are extracted before the proper time, the bones do not develop as they should and the permanent teeth will be more or less crowded, a condition which renders them more liable to decay.

All treatment should be pursued with a knowledge of the predisposing cause. It is impossible to remove the predisposing cause, but remove the exciting cause as far as possible. The object of filling is to restore the continuity of the protective covering of the tooth, we cannot improve the condition of the surrounding tissue, therefore it is just as liable to decay as before.

In filling temporary teeth it is not advisable to use gold, as the plastic fillings are preferable for two reasons: they are more quickly introduced, therefore less tedious to the little patient, and will preserve the teeth quite long enough to allow nature, in her ordinary course, to replace them with permanent substitutes.

If decay begins at so late a period that the permanent tooth will replace it before the cavity is large enough to give trouble, I think it would be judicious to leave it without filling. If, however, it is thought well to fill the tooth, we are to be governed by the position of the tooth and condition of the oral fluids.

If the cavity is in the incisors or mesial surface of the cuspid, the position of the cavity, such as will protect it from the friction of mastication, or where there is marked acidity of the fluids of the mouth, I would advise the use of gutta percha.

Where the filling is exposed, or fluids of the mouth alkaline or neutral, use oxyphosphate cement as it is harder and will bear more friction than gutta percha. In temporary molars if the cavity is small I would use amalgam, unless the pulp is nearly exposed—then use oxyphosphate cement, and, if found necessary, the surface of the filling can be removed, retaining-points made and the cavity filled with amalgam.

It is necessary to enumerate here only the few filling materials in general use, viz.: gold, amalgam, tin, gutta percha, and the oxyphosphate and oxychloride cements. Other varieties of material have been used but not with enough success to merit a place among those in constant use. In the majority of cases gold is the best filling material. The various forms in which gold has been used have given way almost entirely to cohesive foil. Soft gold, by reason of its pliability, can, perhaps, be more closely adapted to the

walls of the cavity than any other form, but its difficult manipulation has given cohesive gold, which is more easily worked, the preference.

The failures in gold fillings are generally caused by want of proper adaption of gold to the walls of the cavity, thereby allowing leakage, or by jarring or chipping of the edges of the cavity by the plugger, or by improper finish on the filling; in the latter case it may either overlap the edge of the cavity or be deficient, exposing the edge of the tooth tissue, either of which would be a source of danger. If the gold is not properly condensed it is liable to scale off and thus expose the tooth substance.

Some practitioners are too apt to treat all cases alike, thereby multiplying the number of failures. In a case where gold would be the best filling, if properly introduced, under existing circumstances, it might prove useless in preserving the tooth. Take, for instance, a cavity on the distal surface of a second superior molar, in that position it would be next to impossible to make a perfect gold filling while a good amalgam filling could be inserted successfully. In this instance I would say, use amalgam, a good amalgam being better than a bad gold one.

Another position in which I would not recommend gold is on the buccal surface of inferior molars, when spreading, superficial caries exists, as it would require frequent renewing. Here I would recommend Hill's stopping or some other preparation of gutta percha.

Under the following circumstances I would recommend gold: Where the patient is over fifteen years of age, the composition of the tooth hard and dense, the organic and inorganic constituents well proportioned, and the cavity easy of access so that a compact filling can be inserted and properly finished off.

In contour filling cohesive gold is the only material which can be used successfully. The best manner in which to prepare gold to make a strong filling, is to fold the leaf fan-shaped.

Gold has no therapeutical action on tooth tissue, therefore will not cause nature to exert any recuperative power, but acts simply as a mechanical plug by which the injurious agents are excluded.

Some operators advocate the lining of cavities with soft foil previous to filling with cohesive gold; this cannot always be carried into practice as the shape of the cavity will not permit it. The objection of this style of work is that no union takes place between

the soft and cohesive gold, and therefore the mass of cohesive gold in the centre of the filling is liable to be displaced.

Practically, amalgam stands next to gold as a filling material, being sufficiently hard to bear the pressure of mastication, it is insoluble, easily inserted and easily adapted to the walls of the cavity. Where the patient is very susceptible to the influence of mercury, amalgam should not be used, but these cases are indeed rare. The influence of so small a quantity of mercury at such a low temperature would have little effect, because a temperature of five hundred degrees is required to produce any injurious mercurial salt.

In using amalgam it should contain such proportions of metals as to prevent it from shrinking. A good percentage of tin will prevent this, the presence of a large proportion of tin makes the filling less brittle which is rather an advantage, as it renders it less liable to crevasse. A good filling material is obtained from forty-nine parts tin and fifty-one of silver, a small portion of gold gives to it a finer grain. Crevasseing is a serious fault of amalgam, especially where the filling is required to bear much pressure. Take for instance an approximal cavity in a molar or bicuspid, the pressure of mastication chips the brittle edge off the filling, leaving a crevice between the tooth tissue and filling which is injurious in two ways; first, matters such as particles of food and the like, being pressed between the tooth and filling tend to force the filling out of place, second, these particles of food remain there and exert an evil influence by being decomposed, forming acid which renews the decay, this latter objection will apply to any amalgam filling which has to bear pressure, the former only to approximal fillings. Gold has not this objection, being malleable.

Another great objection to amalgam is its tendency to discolor. Any filling which contains mercury will discolor in the mouth, therefore is not suitable for use in any cavity where the filling is exposed to view, as for example in the incisors or anterior surface of cuspids. It not only oxidizes on the external surface but also on the surface, which is in contact with the tooth substance, and will cause a dark appearance on the surface where the walls of the cavity are thin and semi-transparent. The formation of oxide beneath the filling in some cases slightly raises the filling from its place so that the surface is higher than the surface of the tooth tissue surrounding it. This is apt to make the filling leak, yet it is possible that this oxidation retards the process of decay by its

presence. When new, the color of amalgam is less objectionable than that of any other material with which teeth are filled, and when subject to constant friction by mastication presents a smooth, bright surface for a long time. Amalgam should be used immediately after it is mixed for, if disturbed after crystalization begins, it is likely to become more or less friable. Too much mercury or too little will also injure the properties of amalgam.

Amalgam can be used to advantage in some cases as a foundation for gold fillings ; for example, a cavity which extends so far below the margin of the gum as to make it impossible to apply the rubber dam successfully the cavity may be filled nearly to the margin of the gum with amalgam, allowing it to set, apply the rubber dam, and complete the operation with gold.

I would conclude then, that amalgam would be preferable to gold in the following cases :—In back teeth, the crowns of which are too frail to stand the pressure necessary for the insertion of gold, in cavities where it is impossible to properly consolidate and finish off a gold filling ; for example, the posterior surface of a second or third molar, in molars of the temporary set and, as above suggested, as a foundation for gold in certain cases.

Next in order, we will mention tin, which is not very extensively used on account of the difficulty of inserting it. It is manipulated in the same manner as soft gold, therefore considering the difficulty of inserting it, the very slight difference in cost of the quantity of material required for a filling, and the fact that it becomes black where the fluids of the mouth are vitiated, gold is preferable, for where you can insert tin you can insert gold.

It is better than amalgam to preserve a tooth ; on account of its malleability it will not crevasse or chip at the edges, it will therefore remain in contact with the walls of the cavity if properly introduced.

Gutta percha has a number of good qualities, although not hard enough to bear the friction of mastication, yet in protected cavities, or those where no great amount of pressure comes on the filling, gutta percha will give years of service. It is especially useful in the teeth of children under the age of fourteen years ; under this age it is not advisable to use gold as the teeth are not thoroughly developed, the pulp larger and the proportion of inorganic matter less than in teeth of adults. The pulp being larger a metal filling, by reason of its great conducting properties, is liable to cause death of the pulp. During the constitutional changes of puberty the mucous

secretions are markedly acid, and from that cause a recurrence of decay is liable to take place ; at that period the teeth are also very sensitive. For these reasons gutta percha is a valuable filling material at and before that period until the composition of the teeth is determined and the fluids of the mouth have returned to their normal state.

It is urged as an objection to gutta percha that it shrinks from the walls of the cavity, but if the cavity be kept perfectly dry and the walls are first coated with a solution of gutta percha in chloroform and the filling then introduced without too much heat and kept under pressure until it cools all the shrinkage will be about counterbalanced by the heat and moisture of the mouth.

It is well adapted to buccal cavities in second and third molars where there is a tendency to superficial decay, as the filling must be frequently removed. Approximal cavities which can be easily approached from the side instead of the crown are suitable cases for treatment with gutta percha ; but here there is one objection to its use ; when severe pressure comes on the crown over the filling, if there is only a thin portion of tooth tissue intervening, it will give way as the gutta percha is not sufficiently hard to afford support, so this treatment is only admissible where the cavity is a considerable distance from the crown.

Cement filling has of late years taken an important place among filling materials and presents many useful properties, but has one fault which entirely destroys its worth as a permanent stopping, that is its solubility in the fluids of the mouth. It is especially soluble if there be a small amount of acid present, and acid is found in nearly every mouth from some source or other ; if the saliva be not acid itself, there are other sources from which the destructive agent may come, such as acids taken with food or medicine, or formed by the decomposition of particles of food left between the teeth. If the fluids of the mouth were always alkaline then cement fillings would give efficient service for a length of time, but although the saliva is slightly alkaline when first secreted it becomes neutral and frequently acid when mixed with the secretion of the mucous glands of the mouth, and its influence is constant upon the filling. The decay of the teeth is of itself a proof of the presence of acid, for decay in its first stages consists in a decalcification of the hard tissues of the teeth by acids present in the mouth.

The cements are very valuable as capping or nonconductors in large cavities under metallic fillings where the pulp is nearly or altogether exposed, because the salts of a metal are not as good conductors of heat and cold as the metals themselves. In the choice of a cement for this purpose one should be sought which will not produce too much pain and discomfort to the patient. If the pulp is exposed it is well to cover the exposed part with oxide of zinc, mixed into a soft putty-like mass with creasote, then apply the cement in a consistency which will require little or no pressure and leave unmolested until thoroughly set. A filling made of oxide of zinc and powdered silica mixed with phosphoric acid is less irritating than one mixed with zinc chloride and makes equally as good cement for lining cavities.

Tooth tissue will not decay under oxychloride filing, and even partially decayed dentine will become hard and serve for many years when left over a nearly exposed pulp if covered with this cement. The ingredients of the cement act as both stimulant and antiseptic, inducing in some cases better organization in the living tissues to which it is applied. It is the only filling material that adheres to the wall of the cavity and will therefore be more likely to exclude moisture, but when the filling becomes dissolved away from the edge of the cavity it will allow recurrence of decay just the same as any other filling, when not in contact with the wall of the cavity. Where the operator intends to insert a metallic filling in a tooth of soft composition it is well to line the cavity with oxychloride or other cement, allowing it to come as near to the edge as possible without being exposed, make the retaining grooves in the cement, and fill with gold or amalgam, whichever is most suitable to the case.

This method will give the advantages of a hard surface with the preservative influence of the cement against the walls of the cavity.

The good qualities of oxychloride or oxyphosphate filling may be enumerated as follows:—It is a non-conductor, it adheres to the walls of the cavity, therefore excludes moisture; it has a beneficial therapeutical action on tooth tissue with which it is in contact, it is easily introduced and easily adapted to the walls of the cavity, and it is very near the color of the teeth.

It may be used to advantage in the following cases:—For filling nerve canals and pulp chambers, for lining cavities in sensitive teeth, for capping exposed pulps, for temporary or test fillings, for filling

in temporary incisors and cuspids, and also in teeth of soft texture; in the latter case it will require to be frequently removed. It will also prove servicable where the tooth is so frail that it will not bear the pressure necessary for the insertion of gold filling.

Although there is much in the choice of a material for any given case, yet, many failures occur from lack of skilful manipulation of that material, either in its preparation or insertion; but an operator who is capable of choosing the filling material best adapted to a certain case is also likely to be capable of properly preparing the cavity and manipulating the chosen material.

Cantharides Destruction.

BY T. DALA, Newfoundland.

I have never used arsenic for destroying the pulp in deciduous teeth, because one is never sure of the condition of the foramina at the apex. For a long time I gave nitrous oxide and destroyed it under its influence, then I used repeated applications of carbolic acid. But to Prof. E. T. Darly, of Philadelphia, I was indebted for suggesting the use of Spanish flies, or cantharides, and I can recommend it after nine years' experience. Moisten a pellet of cotton with carbolic acid, and then dip it into the powdered cantharides—not the tincture, generally two applications may be necessary. After removing the pulp, and you desire to preserve the tooth for a short time, place a little dish of lead punctured with a hole in the top, leaving a needle in it, to be withdrawn after filling with amalgam. It is not necessary to treat the root canals of deciduous teeth with the same care as those of the permanent; and my experience with the cantharides has been that they never need it as if arsenic had been used.

The Dental Profession.

Mr. Chairman and Gentlemen:

One of the most memorable and important interviews which ever took place between two individuals in this world, was held on a raft in the middle of the River Nieman, at the little town of Tilsit, in Prussia.

At one o'clock precisely, on the 25th day of June, 1807, boats put off from opposite sides of the stream and rowed rapidly towards the raft. Out of each boat stepped a single individual and the both met in a small wooden apartment in the middle of the raft, while cannon thundred from either shore and the shouts of armies drawn up on both banks, drowned the roar of artillery. The two persons were the Emperors Napoleon and Alexander, and the history of the time tells us that they had met to "arrange the destinies of mankind."

The hastily constructed raft on which the interview took place, will be remembered as long as the story of great conquests and mighty revolutions can interest the mind of man.

The conference lasted but two hours; it was entirely private between two Emperors and yet it was fraught with momentous consequences to millions. It was one of the great crises in human history, when the currents of power that govern the nations take new directions and break over the bounds and barriers of ages.

Fifty years ago this present autumn, in the City of Baltimore, was held another conference of far more momentous and lasting importance to mankind, than that between Napoleon and Alexander. It was not watched with larger expectancy by great armies; it was not hailed by the thunder of cannon and the shouts of applauding thousands; it was not arranged beforehand by keen and watchful agents, guarding the interests and safety of those who were to meet. It was at night—in a private house and was brought about by the mingled anxiety and desire of a few earnest men to know more of the truths which had so fired their imagination and charmed their senses. And yet from that humble night conference between Dr. Chapin A. Harris and his associates, there have gone forth beams of light and hopes of relief to the ends of the earth.

The plans formed by Napoleon and Alexander at Tilsit, were reversed and defeated long ago, and it is impossible to trace their influence in the conditions of European nations to-day, while from the plans and purposes of that other conference, have gone forth blessings which have already changed the condition and cheered the hearts of millions and have more influence in the world to-day than ever before, and are destined to go on increasing in power and influence until they shall be received as the harbinger of comfort and joy to every nation under heaven.

It is now plain of recognition, that the great science of medicine and surgery, wrestling with the intricate and unsolved problems of the human system, failed at the opportune time to comprehend the importance which attaches to the care and preservation of the teeth, as it utterly refused to make provision for their study or the treatment of their diseases.

Respectable and medically-educated dentists, seeking admission to their associations, were refused because they were *Dentists*, and their requests for educational facilities, whereby those desiring to devote their energies to this department, spurned with contempt, as being beneath the dignity of a medical staff.

Dentistry as a specialty of Medicine was completely ignored by them.

Entire courses of lectures were delivered in their colleges, without the promulgation of a rational theory on the cause, effect or treatment of a single pathological condition of the teeth. That they were parts of the human organism, complicated in structure and relations, more subject to diseases than other organs, in intimate association with the centres of life, important agents in inciting disease in other parts, leading not infrequently to intense suffering and the abridgment of human life, were matters receiving no consideration.

Standard Medical works taught theories exploded, and application of remedies abandoned by Dentists long before. Every day evidence was accumulating, showing the unfitness, the inability of Medical schools to furnish the Dental students the information which should fit them for the practice of Dentistry. How, then should the work of education be accomplished?

The establishment of independent schools seemed alone to offer a satisfactory answer, and with a full appreciation of these facts, a few self-denying, resolute men, led by Dr. Harris—and as a result of that humble night conference—organized, in the City of Baltimore, in 1839, the first Dental College in the world.

From that humble beginning—that little cloud which, in 1839, seemed scarcely so large as a man's hand—have come benighted influences, broadening and expanding, until to-day there is not a civilized nation of the earth where their benefits are not seen and felt.

Then, Dentistry as a whole scarcely took rank among the honorable trades; to-day it is justly classed among the honorable

professions. *Then*, its practitioners were craftsmen ; to-day they are gentlemen of culture and scientific attainments. *Then*, it was a conglomerate and unorganized mass of men, each seeking to conceal his own ignorance ; to-day it is a body of generous men, organized into societies for mutual improvement. *Then*, it was scorned by the Medical profession and unnoticed by the world ; to-day it is treated with consideration and respect by the whole Medical fraternity and accorded its justly important position as a department of Medicine by the broader cultured and more conspicuous of all the professions. *Then*, it was composed of men schooled only in secret formulæ and mysterious arts ; to-day it is composed of men schooled in science and trained in the arts of benefitting mankind. *Then*, it was without resources or appliances ; to-day it is possessed of large resources, and is rich in the most ingenious and appropriate appliances.

Then, it was without literature, neither had it authority ; to-day it has a respectable and rapidly-increasing literature and authority as clear and fully pronounced as are the same in Medicine, Law or Theology. *Then*, it was full of envyings, jealousies and back-bitings ; to-day its code of ethics is as dignified and exacting, and the intercourse among its members as unselfish and genial, as the same in any other profession.

These, gentlemen, are a few of the contrasts between 1839 and now ; and these are the things that have been wrought out in Dentistry, by the spirit infused into it at that humble conference fifty years ago ; and when we contrast the condition of our profession to-day with that prior to '39, we can but feel that the *seeming* evil of separation from the Mother Science, has been overruled for good to suffering humanity, and the credit of general medicine. It is believed the history of no other profession offers a parallel to the remarkable forward strides taken by the Dental profession during these fifty years. Yet rapid and remarkable as has been this progress, when another fifty years shall have "rolled away, breaking their noiseless waves on the dim shores of eternity," it will be seen that at no previous time has it been so rapid and remarkable as at the present.

Never before has the Profession been so well and so thoroughly organized, when so many of its members have been embraced within its societies ; when the standard of educational and professional requirements has been so high ; when the fields considered proper

for investigation and study, have been so varied and widespread, and when the ambition and aim of all seemed to be to study, investigate and disseminate knowledge, as it relates to the Profession.

When in any previous time, has it been known that the Medical Profession was seriously considering "the care of the teeth from a medical standpoint," or when a man so high in the estimation of his profession as Dr. Shrady, the accomplished editor of the *Medical Record*, has said: "That the sooner our Medical Colleges insist upon a knowledge, in their students, of oral surgery, before graduation, the better for all concerned;" when "reflex nervous dental irritations" form the leading discussions of State and National Societies; when Laryngologists begin the study of their specialty at the entrance to the oral cavity, insisting that many of the diseases of the upper air-passages are directly traceable to dental irritations; when the founding of Dental Hospitals and Dental Infirmaries are seriously considered—and indeed are already in the process of formation; and when members of the Profession, from different and distant localities, can come together, as on this occasion, in a mutual interchange of ideas and expressions of good-will towards one another? There is one feature with reference to our Colleges of which I desire to speak briefly, and which I think I can do with propriety, as I know that you, of Ontario, hail with as much pleasure any measure looking toward higher Dental education, as we of the States.

At a meeting of the "National Association of Dental Examiners," held at Saratoga on the 6th of last August, twenty out of twenty-five colleges recognized by that Association being present, a resolution extending the course necessary for graduation, to three years of not less than five months in each year, came up for consideration and received the affirmative vote of nineteen of the institutions present; this vote was afterwards made unanimous, as, in accordance with the rules governing the Association, it became equally binding upon the five not represented, so that to-day all the reputable Dental Colleges of the United States require, on and after the present year, three full courses of not less than five months each, for the graduation of their students; the only exception to this rule is, the degree of M.D. being accepted as equivalent to two years in the Dental School.

The special feature of this whole movement, and one I desire to emphasize, is the fact that it was led by the younger colleges, just as

in the Profession at large, it is the younger men that are pushing out into new fields, that are carrying the banner of science to the front, and that are doing so much to broaden and elevate our chosen profession.

Two features more are needed, and which, I believe, will soon come, *i.e.*, preliminary examinations—which indeed are already required in some of the Colleges—and *a pupilage of not less than two years in a reputable Dental office, before being eligible for the preliminary examination.* With these additions, the Dental Profession in the United States will be better organized than any other of the learned professions.

“With its colleges united into one harmonious association, working for the upbuilding of the standards of which they teach; with statutory enactments in a large majority of the States governing the practice of Dentistry; with a three-years’ graded course of instruction, with preliminary and intermediate examinations, we may well feel proud of our position and respectfully challenge the Medical Profession to emulate our example.”

Whether Dentistry shall ever be recognized and accepted as a specialty of Medicine or not, the rapid strides towards perfection she is now making will entitle her Degree to as much consideration and respect as that of any degree granted in this or any other country.

But there is another feature of Dental Education, upon which I have thought much, though I have never seen it discussed by any of our societies or journals, and as I have the honor this evening of being the guest of an institution, in some respect superior to ours in arrangements, I will venture to throw out the suggestion, trusting that my friends here may find in it something worthy of reflection.

It is the founding of a National Dental School in the Profession, for the Profession, and controlled and maintained by the Profession. An institution about which it may gather, selecting its own teachers, directing its own affairs, and so chartered as to receive endowments and establish chairs in special departments, as is the case with so many of our foremost Theological, Scientific and Literary Institutions. The old men, the pioneers of our Profession, are rapidly passing away. Some of them—all too few, however—have acquired a little means, which they would gladly bestow upon such an institution, so that in a few years it would be placed above financial necessity, and in a position to do better and more progressive work than the schools of the present day.

That you have surpassed us in that your school is founded, in a measure at least, upon the Profession, is to your honor but not to our dishonor. With us the school was the outgrowth of a desire on the part of a few men for more knowledge; with you it was the product of our industry, failures and successes. With thirty years' experience behind you, and with the leading men of the Dominion graduates of our institutions, it were strange indeed if you should not have combined in one school features in advance of ours.

Yet institutions of learning should be judged, not so much by the manner of their formation and the regulations governing them, as by the work they are doing. With us we have many things to condemn, and I doubt not you have *some* things also; while with both there is enough of good to engender a spirit of emulation, and to lead the Profession on, the two sides of the Niagara to a closer and more intimate bond of fellowship. The Dental Profession has the making of its own destiny. Whether that destiny shall be wrought out—in the light and experience of the past—in an independent and dignified course of its own, maintaining separate and distinct institutions of learning, and with a separate and peculiar degree as now; or whether Dentistry and Medicine shall be taught in the same institutions, by the same teachers, and all and each having the same degree—a common profession, a common education, a common degree, and having common privileges and common honors—I know not. But this one thing I do know, and this much I desire to say, that Dentistry took its first and greatest strides towards the perfection in which we see it to-day, when, fifty years ago, it started out on an independent and separate course.

Is it possible, gentlemen, that the men laying the foundation of a profession capable of such progress, were "ignorant," "unlearned," "unthinking," "peripatetic itinerants"? I cannot believe it! On the contrary, I do believe that, in their day and generation, they wrought better and wiser than we in ours. We do not flatter ourselves with the notion that we have attained perfection, and that no more truths remain to be found. We believe that we are wiser than our ancestors. We believe also that our posterity will be wiser than we. It would be gross injustice in our grandchildren to talk of us with contempt, merely because they have surpassed us; to call Watt a fool because mechanical power may be discovered which would supersede the use of steam; or Franklin an ignoramus because he did not know that electricity would become the great

motive power of the world; or Morse ignorant and unlearned, because he did not appreciate the revolution in the commercial world his telegraph was destined to achieve.

As we would have our posterity judge us, so we ought to place ourselves in their situation—to put out of our minds for a time—all that knowledge which they, however eager in their pursuits after truth, could not have, and which we, however negligent we may have been, could not help having. It was not merely difficult, but absolutely impossible, for the best and wisest men fifty years ago to be what a very commonplace person in our day may be, and indeed of necessity must be. “It is easy enough, after the ramparts have been carried, to find men to plant the flag on the highest tower. The difficulty is to find men who are ready to go first into the breach, and it is the grossest injustice to insult their remains because they fell in the breach, and did not live to penetrate to the citadel.”

Sydenham first discovered that the cool regimen succeeded best in cases of smallpox. By this discovery he saved thousands of human lives; and we venerate his memory for it, though he never heard of inoculation. Lady Mary Montague brought inoculation into use, and we respect her for it, though she never heard of vaccination. Jenner introduced vaccination, and we admire him for it, although some still safer and more agreeable preservative should be discovered. It is thus that we ought to judge the events and the men of other times. They were behind us. It could not be otherwise. The question with respect to them is not, *where* they were, but which way they were going. Did they exert themselves to help onward the great movement of the human race, or to stop it? A person who complains of the men of '39, for not being the men of '89, might just as well complain of a projectile for describing a parabola, or quicksilver for being heavier than water.

There is a small lake upon one of the high passes of the Alps, the waters of which find their way to the Ocean by two different channels. One portion takes the course of the “wide and winding Rhine,” and goes forth to mingle with the stormy waves and crashing icebergs of Northern seas. Another joins the blue current of the “Arrowy Rhone,” and finds its way to the Mediterranean, along the vine-clad hills and sunny vales of France. One finds a home under the cold splendors of Auroral light, amid the freezing horrors of the Arctic Zone. The other blushes in the glow of

Italian skies, and lingers idly around the classic shores and storied isles of Greece. So small is that mountain lake, that a single flake of snow falling upon its surface, and dissolving in its water, may supply a portion for each of the two mighty rivers. Different parts of the same drop, that shot out the rays of the same crystal star, in the snowflake, may have a subsequent history, and a habitation separated from each other by ranges of the loftiest mountains, the utmost diversity of climate and the diameter of the globe.

In a sense, are we not like the snowflake falling upon the bosom of that Alpine lake? Each by his contribution swelling the stream of Discovery. Shall our contribution find a home amid Arctic superstition, error and falsehood, or amid the glow and warmth of truth, progress and light?

"Man may last but never lives,
Who much receives, but nothing gives;
Whom none can love, whom none can thank,
Creation's blot, Creation's blank."

Gentlemen, the human mind is ever inquisitive, ever ready to scale the most ragged steeps.

"Wake up its enthusiasm, fling the light of hope on its pathway, and no matter how rough and rocky it may be, *onward* is the word which charms its most willing powers."

CHARLES S. BUTLER, D.D.S.,
Buffalo, N.Y.

Toronto, Nov. 21st, 1889.

Dentistry in New Brunswick.

BY A LADY CORRESPONDENT, Moncton, N.B.

I have been reading your JOURNAL with the greatest pleasure and profit. I believe it has the honor of being the first Dental Journal printed in the Dominion,* a fact sufficient to show that the standard of the profession is being elevated in the Dominion of Canada as well as the United States.

*We are sorry we cannot claim this honor: it belongs to Dr. W. Geo. Beers who founded the old *Canadian Journal of Dental Science* about eleven years ago, but found paying the printers, the editor and all the subscriptions himself, to much, even for such an enthusiast for the general benefit of the profession, as our editor.—[THE PUBLISHERS.]

The articles are, it seems to me, admirably chosen, both for those laboring in the profession, and educating the people as to what their dentists should be.

It is with gratification not unmixed with a tinge of envy, that we in New Brunswick, see the standard of dentistry so much higher in Ontario and Quebec, than in our own Maritime Provinces. I do not mean that we have not as proficient dentists, but while they are protected there by dental laws, we have an open field for quacks, who can in a multitude of ways palm off their proficiency in so called painless (?) dentistry; while they are debarred from their nefarious practice in places protected by law, they come to us seeking "green fields and pastures new" and in the most resplendent dress and in the attractive announcements of painless extracting free of charge, cozen a certain class of credulous persons into having teeth extracted that ache, or in the future may ache, (like the boy who was sent to the store with a picture and flogged before he went, for fear he might break it) and in the meantime extolling the merits of their money-making medicine, warranted to cure everything from rheumatism to a sore toe, and selling bottle after bottle to grateful victims, who think they have struck a bonanza in having teeth extracted without money and without price, when if they had consulted a proficient dentist, they might have been made useful for years.

The time has gone when dentistry was on a plane with any trade, when it was thought that all required was muscle to bring out the teeth; and when any boy working for a few months in a dentist's office could put out his shingle as "Dr. so and so" and cheat himself and his patients into the belief that he was a proficient dentist. Where the community is protected by a dental law and the standard consequently elevated, dentistry is as it should be, placed side by side with the medical profession. When we consider what important effects the teeth have upon the general health, medicine and dentistry seem twin brothers.

We see the good effects of a dental law in that it leads to conventions where dentists may meet, advance and gain new ideas relative to their profession, benefiting themselves and consequently the general public and raising the standard of the profession higher.

It is for the dental practitioners of New Brunswick, to be up and doing, for we know by experience that nothing is to be gained by mere sentiment and theory, each should act well their part, putting

their shoulders to the wheel, and with their united efforts, break down all barriers, and present a Bill to the Legislature, when it would seem to all lovers of advancement and fair play that such a body of clever and intelligent men would at once see the advisability and the necessity of passing it with very little discussion and without a dissenting voice.

It is to be ardently hoped that in the near future we may see such a happy state of affairs in New Brunswick, while I feel confident every right-thinking dentist would be only too willing to do his share to bring it about.

Copper Amalgam.

BY GEO. H. WEAGAST, L.D.S., Cornwall, Ont.

Two years ago, in the City of Montreal, at a meeting of the Con. Val. Dental Society, I had the honor of reading a paper on Copper Amalgam—the very first paper, as far as I know, which had ever been devoted to the subject. My paper was published in several of the Dental Journals, and Copper Amalgam, as a filling material for decayed teeth, immediately sprang into popular favor. Since then much has been said and written both for and against it, and, although I have changed my views in regard to some of the details of manipulation, the main features of my paper are being constantly endorsed, all over the world, by thinking and working practitioners. Nearly every month, mention of it at least, may be noticed in some one or more of the Dental Journals, and often several pages are wholly taken up in discussing the merits, or demerits of this practically new filling material. We never read the reports of the transactions of Dental Societies now, without finding some portion of the time of the meeting taken up, either by papers, clinics, or discussions upon this subject. What, then, can be the reason for this intense and general interest which is being shewn by the profession during the last two years? There certainly must be something in it or the subject would have been dropped long ago. At every meeting and in every number of the different Dental Journals we see new suggestions offered upon modes of treatment, operating, etc., which we never hear of again. New instruments

and appliances are described and illustrated and no one ever says a word about them afterwards. Some dentist brings forward a new theory, and devotes pages in proving it, and no mention is ever made of it from that time forth. There certainly must be strong grounds for keeping up this Copper Amalgam question for so long a time, and it seems to me that a solution may be looked for in the fact that dentists saw in Copper Amalgam the very thing they have been wanting for years: the missing step, as it were, in the range of filling materials, which would, in numberless cases, enable us to avoid the dire necessity of the forceps. Since dentists have come to see the value of plastics in the great work of tooth-preservation, we have been on the look-out for this very material. Though thousands of different amalgams, alloys, cements, and other plastics have been brought out and used, and over and over again manufacturers and others have claimed that they were perfect, we now see how universal was the feeling that they were far from perfect, else why the avidity with which Copper Amalgam has been snatched at and lauded to the skies? When it was only proved that it possessed those tooth-preserving qualities that were also claimed for other amalgams? We know of numberless amalgams guaranteed not to shrink. We have seen test tubes containing beautiful amalgam fillings that defied the shrink-detecting aniline dye, and we all of us have seen these very same amalgams "take water" when the supreme test in the mouth was applied. We all made good amalgam fillings, but—(in our inmost hearts we doubted.) We saw many, many failures which we were powerless to prevent. Is it any wonder that we received this Copper Amalgam (black as it was) with open arms? It did not take us long to convince ourselves about the genuineness of the properties ascribed to it. We knew the right article when we saw it. We recognized the signs we had been looking for so long.

A mistaken idea that many dentists have, is that one amalgam ought to be made to fill the bill for every case they may have to deal with, and they go searching the world over for an alloy upon which they can always depend. Many have asked me what amalgam I considered the best; and when I asked, "the best for what?" the surprised reply would be, "why, for filling teeth, to be sure; what amalgam—in case you wished to use only one kind—is best in all cases?" One might as well ask what medicine is the best for all kinds of diseases. If all patients, and all teeth and all

cavities were alike—in short, if all conditions were exactly alike, then it would be possible to obtain an amalgam that (again supposing all dentists to be equally skilful) would in every case be equally successful. No one pretends to assert that Copper Amalgam will do for every case—it does not take the place of other materials. It simply performs a service which they cannot do so well, or are utterly incapable of doing at all. It only fills a niche that before was unoccupied, but it fills it well, and those of us who know the importance of being always prepared for an emergency cannot afford to be without this valuable adjunct to our filling materials.

But Copper Amalgam is not so very new, after all. Every now and then someone comes forward, who says he used it years and years ago—thirty and even forty years ago—and it seems strange that we are only now beginning to learn about it. Why, two years ago—when I read my paper—all I knew about it was derived from my own personal experience with it, an experience which was only acquired after years of study and experiment. It must not be supposed that I arrived at my conclusions in a hurry, and, could I only have had the assistance, or even encouragement, of a co-laborer, my endeavors would have been sooner crowned with success. When I began my experiments in this line, I searched diligently all the Dental literature available, to obtain any information bearing upon the subject. I waded through reports and correspondence without number. All our text-books, scientific works, works on chemistry and encyclopedias were silent on the subject. All I could find out about Copper Amalgam was very little indeed, and very unsatisfactory; but what little I could hear only spurred me on. I managed incidentally to learn that such a compound was used somewhere in the wide world by alleged dentists, with crude and uncivilized ideas, still I had never seen the material in or out of the mouth. I had never seen a dentist who had used it, nor had I ever met a dentist or anyone else who had seen it or known of it being used as a filling material for decayed teeth. Moreover, I was led to believe, from what little mention I could find of it, that Copper Amalgam, from its poisonous and other unpleasant qualities, and its disagreeable name and associations, etc., was wholly unfit to be used for Dental purposes. All that was bad in amalgams generally, I was told, was a hundred-fold intensified in this. If ordinary amalgams discolored the tooth, this turned the tooth such

terrible colors that the mere allusion to them produced a feeling of disgust. If other amalgams were suspected of occasionally exerting an injurious therapeutic action upon the system, what could you expect of a material compounded of two such dangerous metals as Copper and Mercury? But it was admitted that there was practically no shrinkage in an amalgam of copper and mercury. This was its only good quality; but, in the face so many dangerous qualities, who of us would have the audacity to experiment with it in the human mouth. Someone has said, "it must have been a brave man who first swallowed an oyster," but, gentlemen, I tell you it required a good deal of moral courage to put the first filling of Copper Amalgam into the human mouth under these circumstances, and I have no trouble whatever in recalling all the incidents connected with my first experiment in this line.

It is not a very difficult thing to make a Copper Amalgam—when you know how; and to one who has had a life-long experience in the manipulation of amalgams it would appear a very easy matter indeed—until he tried. It was a long time before I discovered how to cause copper and mercury to amalgamate at all, and a great deal longer before I succeeded in producing a Copper Amalgam that would set; and when, after an infinite amount of trouble and work, and the expenditure of more time and money than I would care to acknowledge, I obtained a dirty and unwholesome-looking mass of what, I hardly dared to hope, was Copper Amalgam and nothing else, the result was far from promising, and I did not wonder that dentists hesitated to use it for filling teeth. But, crude as the material was, I soon satisfied myself that it possessed properties which ought to prove invaluable in Dentistry. I resumed my experiments with a better heart for the work, and a determination to conquer. I proved, to my own satisfaction, that to the presence of metallic oxides in the amalgam was due the discoloration of the tooth structure, and, in some cases, the disintegration, wearing away or "rotting" as Flagg calls it, of the substance of the filling itself.

We all know that copper and mercury are oxidizable metals—that these metals, under certain conditions, have the power to absorb an immense amount of their own oxides, and an amalgam of these metals may contain oxides without showing them. But the presence of these oxides injures the filling more or less according to the quantity contained; and great care must be taken to avoid it.

A good Copper Amalgam must possess the following properties, viz.: purity, cleanliness, plasticity, and quick-setting. To be pure, it must contain no other metal than copper and mercury—not even a trace. To be clean, it must not contain anything in the shape of oxides of either copper, mercury or any other metal, or any other substance whatever; it must be plastic and quick-setting so as to be easily manipulated.

As I said before, copper is an oxidizable metal, and, in connection with mercury, equally so. The action of water, air, and heat will oxidize it. The oxides so formed render the amalgam unclean, and injurious to its lasting qualities. They also tend to discoloration of the tooth structure, which does not occur with a perfect copper amalgam. We cannot prevent the surface of the filling becoming discolored when it comes in contact with the fluids of the mouth; this discoloration is necessary, and whenever we find a copper filling does not become black, it is an indication not to use it in that mouth, because disintegration is sure to take place.

At the time I presented the former paper upon this subject, I was under the impression that the more mercury that could be removed from the amalgam the better, "the more quickly it would set and the harder it would become." Other manufacturers and operators believe so still, and some of them make use of hydraulic pressure to squeeze out the mercury. I have since become convinced that this is unnecessary, that it interferes with the plasticity and sometimes with the setting, and also that extreme hardness is a decidedly objectionable feature in an amalgam. I have also found that when the amalgam contains so little mercury, more heat is required to render it plastic, that this increase of heat makes it unclean (oxidizes it, in fact) and retards the setting.

It was only after a great deal of experimenting that I discovered how to make a copper amalgam which would become plastic at a low temperature, and also set in a few minutes without the necessity of removing mercury. I bring about this result by a process of tempering.

Dental Dots Distilled.

D. V. BEACOCK, Brockville.

If you wish to be happy, use coiled wire belting for your dental lathes: I have had two in use for six years and not a break.

To remove chlor-percha from instruments, dip in hot water, rub hard with a cloth.

Dr. Meriam, says a tooth is worth itself, the teeth with which it occludes, and all that they, united, can do for the organization.

Carron oil—Equal parts of linseed oil and lime water mixed together make a capital application for burns.

The deterioration of rubber dam, is due to the formation of sulphuric acid from slow oxidation of the contained sulphur. Wash well in weak alkaline water.

Dr. Miller says, "Give me these two factors (organic acids and fungi), and I can produce caries which will deceive the most experienced operator or microscopist."

To get pure alcohol, I hang a piece of gelatine in the bottle. It will absorb the water and leave the pure article without distillation.

The lady of the near future will select with jealous care, the dentist who guards from harm her oval case of jewels rare, and ten times more fastidiously than she now selects the physician who assists in augmenting her posterity.

Local anæsthetics: There have been chloroform and aconite, Tiffin's drumine, stenocarpine, cocaine, Barr's, Ball's, and now another is on the road, a *shocking* one, the Vibrator.

A piece of rubber vulcanized over the face of an old worn-out rivetting hammer makes one of the handiest things imaginable for fitting the metal air chamber into casts.

Heat red or white gutta percha on a porcelain slab until sufficiently soft to be kneaded full of oxide of zinc; this makes an excellent temporary filling.

It is a waste of time to varnish and oil flasks; to part the investing, oiling is sufficient in all cases.

Selections.

Protests Against Dental Exhibitions.

BY C. BREWSTER, L.D.S.

Inclosed I send you a Protest against Dental Exhibitions, in the form of a protest to the Committees of Public Exhibitions, to refuse the bestowal of prizes on any such objects. Will you authorize me to affix your name to it? If so, please sign the accompanying copy. The dentists in this city have unanimously agreed to sign it. I have sent a similar copy to every dentist in Upper and Lower Canada (whose name I could procure).

My project is to get every dentist in the two Provinces to sign the paper sent to him, *and return it to me*; whereupon, having collected the signatures of all those favorable to the project, I will then attach all the names that I am thus authorized to use to fresh copies of the petition, and return one to every signer, retaining the *original* signatures, so that should a committee at any time object to the petition on the ground that it was not original, the dentist presenting it could procure from me the original if required; to be returned again, however, in case it might in future be again called for by some other committee. Thus two or three, or I hope *all* the dentists in every city, town or village would have in his possession one of these copies. And any one of these dentists presenting his copy to the committee would be sufficient to prevent any future aspirants to the title of "First Prize Dentists" from obtaining their object. And even should there be any hesitation on the part of the committee, all the presenting dentists would have to do would be to call on all the other respectable dentists of his community to support the motion, for it is from among that class that I expect to enroll most of the supporters of this petition; and, sustained by them, it must have a powerful influence on this point with committees of exhibitions.

I would suggest that every dentist frame his copy, and hang it in his surgery, and it will grace his walls infinitely better than any First Prize Diploma would.

Before concluding, I would inform you that we have succeeded in preventing any prize being given to dentists at the coming exhibition in this city.

Hoping to hear from you as soon as possible,

I remain, your most obedient servant.

P. S.—What is your opinion as to incorporating the dentists by act of Parliament, and obliging all those who in future may wish to practice in Canada, to pass a proper examination before a Board of Dentists?

With regard to this, the opinion was unanimously in favor of it.—C. B.

To Committees of Exhibitions.—We, the undersigned dentists of Upper and Lower Canada, wishing to put a stop to the growing evil of exhibitions of specimens of mechanical dentistry, which practice has increased of late years to such an extent as to be now looked upon by the public as a test of superiority, thereby gradually involving many respectable dentists in the same practice, from the sheer necessity of self-protection.

And whereas we look upon the bestowal of prizes for specimens of this work as tending to deceive, and lead the public into the erroneous idea of supposing such dentists to have superior capabilities.

And whereas we, the undersigned, are aware that such specimens do not at all denote any superiority on the part of the exhibitor, as the superior excellence of the dentist does not consist in the mere mechanism of a set of teeth, but in the adaptation of them to the muscles of the mouth, the expression and form of the face, their proper articulation, and the attainment of many other objects which cannot be properly defined and demonstrated in the show-case of the exhibitor.

And whereas we, the undersigned dentists, have come to the determination of endeavoring to prevent all future exhibitions of this kind, we do humbly petition your committee, together with all other committees of exhibitions that in future may be organized, to refuse the bestowal of prizes on dentists for specimens of this work :

Quebec, C. E., R. Ramsay, P. Baillorgeau, J. McKee; Sherbrook, E., A. Gilmore; Melbourne, C. E., W. Beckett; Toronto, C. W., G. L. Elliott, J. W. Elliott, V. Myers, J. W. Slater; Ottawa, C. W., Oliver Martin, F. D. Laughlin; Hamilton, C. W., John Reid; Kingston, C. W., B. W. Day, A. McMichael, J. T. Clements, L. Clements; London, C. W., A. C. Stone; Belleville, C. W., G. V. N. Relyea; Cobourg, C. W., F. G. Callender; Perth, C. W., G. W. Ebersson, A. D. Lalonde; Simcoe, C. W., Charles Rudon; Morrisburg, C. W., R. G. Neagaut; St. Thomas, C. W., H. P. Whipple; Montreal, C. E., Geo. Vanbuskirk, A. Bernard, C. F. Trestler, J. H. Webster, M. Jourdain, H. Ross, J. A. Bazin, C. Brewster.

By their attorney.

(Signed)

C. BREWSTER.

I, James Stewart Hunter, a Notary Public, duly commissioned and sworn, residing and practicing in the City of Montreal, do hereby certify that the foregoing is a true copy of the original remaining, of record in my office.

Acte whereof having been requested by the above-named Charles Brewster, I have granted the same under my Notarial hand and seal of office.

J. S. HUNTER, N. P.

Montreal, 20th August, 1860.

We publish the above paper with pleasure, and hope that it may serve the dentists in the States to make an effort in the same direction. It is time that something of the kind was done. We gave our views on the subject of Dental Exhibitions, some time since, in the *Dental News Letter*.

J. D. W.

Our Canadian College.

The attendance at the College this year is the largest in the history of the Institution. The new college was built about a year ago, the directors were of the opinion that it would be sufficiently large to accommodate all the dental students for some time to come, but each year they have found it necessary to put in a number of additional desks in the lecture-room, as well as new operating chairs in the infirmary. There are seventy-five students in attendance this session, of whom thirty-one are seniors and forty-four juniors. Several causes have combined to interest an unusual number of young men in dentistry. The most potent of these is, no doubt, the fact, that though the affiliation of the College, with Toronto University, and the raising of the standard for matriculation and graduation. Dentistry now occupies a recognized position among the learned professions. The day is past, when a liberal, general education was looked upon as superfluous to a dentist, and good reasoning powers are considered as essential as manual dexterity.

THE ANNUAL DINNER.

The fifth annual banquet of the faculty and students, was held at the Arlington Hotel, November 21st. There were over a hundred guests present, and the dinner was a decided success, reflecting credit both upon the committee of management, and the managers of this fashionable West-End hotel. Among the invited guests were: Drs. Ziegler, Keefer, Fisher, Troutman, Webster, Capon,

Hipkins, Stirton, Mills, Ball, Roberts, Callender, Oakley, Foster, Porter, Wade, Richardson, Spaulding, Lennox, Sefton, Adams Sr. and Jr., Caesar, McLaughlin, Trotter, and Messrs. C. H. Hubbard and Chandler. Dr. Aikins, Dr. Geikie, Dr. Butler, and Rev. Leroy Hooker, represented sister institutions and were the guests of the faculty. Letters of regret were read from Hon. G. W. Ross, Mayor Clarke, Rev. Dr. Kellogg, Vice-Chancellor Mulock, Principal Kirkland, Dr. Beers, and other prominent men who were unable to be present.

After full justice had been done to the excellent menu that had been provided, President A. W. Thornton, delivered a short address in which he discussed various questions of interest to dentists, dealing chiefly with such as have reference to professional etiquette and practice. Whether or not Mr. Thornton had by mistake, taken a mouthful of pepper-sauce just before rising, is not known, but certain it is that his remarks were very pointed. The toast to the "Learned Professions" was then briefly responded to by Rev. Leroy Hooker, and Dr. Fisher of Warton, after which Dr. Willmott proposed the toast to "Sister Institutions" in his usual happy style. Dr. Aikins in reply, spoke of the good feeling which should and does prevail between medical men and dentists, and pointed out how they might render each other much valuable assistance. Dr. Geikie spoke of the growing variety of dentists, and created much amusement. He had carefully watched the interests of the college from its babyhood, and trusted that it would have a glorious youth and manhood. Dr. Stuart, of the Faculty, then proposed the toast to "The Dental Profession" which was responded to by Dr. Chas. S. Butler, of Buffalo, who delivered the address of the evening. (See page 18.)

The toast to "The Faculty" was responded to by Drs. J. B. and W. E. Willmott. The former said that he was proud of the College and felt that he had good reason to be so. He was pleased with the students of 1889 and 1890, and complimented them on their ability. Dr. W. E. Willmott, as the youngest member of the faculty, was warmly received by the students. He spoke briefly and ended by wishing the students success in the spring. Representatives from the students of Trinity, and Toronto Medical Schools, the College of Pharmacy, and Toronto University, were then called upon, and all responded. Short and pithy addresses were also delivered by the dental students themselves, Messrs. Mills and

Moyer, representing the seniors, and Messrs. Boyes and Fill, the juniors.

Along with the toasts, was a good musical programme, rendered collectively and individually, assisted by one of the best of the city orchestras. Mr. W. Richardson acted as musical director, and Mr. W. J. Trotter as accompanist. The committee of management was composed of A. W. Thornton, President; A. T. Pearson, and H. D. Boyes, Vice-Presidents; G. J. Musgrove, Secretary; W. A. Richardson, W. J. Trotter, A. Agnew and Dr. Lennox.

The proceedings were closed by the singing of the national anthem, after which the guests dispersed, each feeling that he had passed what *The Mail* was pleased to call "a most scrumptious evening."

ODONTOLOGICAL SOCIETY OF QUEBEC.—The first meeting of this young society was held in the rooms of the Medico-Chirurgical Society, Montreal, on the evening of December 11th. The following were present:—Messrs. Bazin, Andres, Lovejoy, McDairmid, E. B. Ibbotson, J. S. Ibbotson, Stephenson, Berwick, Brown, Vosburgh, Globensky, Bourdon, Brosseau, Barton, Fitzpatrick, Maufette, Beers. The President, E. B. Ibbotson, in the chair. The President addressed the meeting in a few well-chosen words, explaining the objects of the Society, and trusting that on the second Wednesday of each month the members would make a special effort to attend and contribute to the programme. Incidents of office practice were discussed. W. George Beers gave a contribution, with microscopical and blackboard illustrations, on "Hyperæsthesia of Dentine," which was afterwards well discussed.

Editorial.

A Word to Our Readers.

The immense increase of the dental profession in the Dominion, need not alarm the pessimist. It is simply commensurate with the growth of the country. Let us ask ourselves, if it is not wiser and more patriotic to develop our own professional resources, and to improve the standard of education at our own doors, than to worry ourselves over foreign spheres, where we are not needed, however kindly we are received. To each one of us the reputation of

Canadian dentistry ought to be paramount. The success of a Canadian dental College: of Canadian dental societies: of a Canadian dental journal, ought to be received with personal delight. What claim could we have to recognition and an aspiring and progressive profession if we had to depend entirely upon the schools, the societies and the journals of our kindly neighbours? Would not any dentist in any city, town or village of this Dominion, feel personally ashamed if his patients reproached the Canadian profession with negligence in these matters?

It is impossible to conduct a journal to please everybody, but everybody can give us advice; and anybody who sees scope for improvement, will confer a favor, only second to the remittance promptly of past and present subscriptions, by writing his convictions to the editor.

Volume Two.

This number begins a new volume. The Dominion of Canada, as an integral and important part of the greatest empire in the world, is fully awake to its material and political possibilities. The dental profession in such a country cannot afford to be without a home journal. The DOMINION DENTAL JOURNAL, belongs to the Canadian profession.

Help or Hinder.

Which do you intend to do? This Journal is not published to push the business interests of its proprietor, or the professional success of its editor. They are both perfectly independent of any such collateral necessity for attracting notice. Somebody must risk something, and somebody must sacrifice time if Canada is to have at least one Dental journal. The publisher risks his money, and the editor freely gives his time. Now, do you not think, "gentle reader," you have also a personal and professional interest in helping, by your subscription, by your advocacy, by your contribution of hints and more elaborate papers, and by your advice. Tell us just what you would do if you were editor, and do not be backward in giving advice, for we feel every day the need of it.

Of course there are other journals, richly endowed by wealthy business firms, better than this one. But this one is the only one in Canada. It could easily sell its independence to-morrow for

such a sum as would pay for its publication for years to come. But it is loyal to the Canadian profession, and would no more sell out its advertising pages to one firm than Canadians as a people would sell their national birthright. We need our own independent journal in this great Dominion, and we care more to see it in every Dental office from Halifax to Vancouver, than if its circulation was doubled from Maine to California. Our neighbours do not need this Journal: Canada does need it. Therefore we ask every Canadian dentist to "fall in" the ranks of our helpers.

Dr. W. R. Patton, of Cologne.

When we were younger than we are, one of our most promising *confreres* left his native city, Quebec, where he practised a short time, and settled in Germany. During the existence of the "Canada Journal of Dental Science," he sent us contributions. We are delighted to be able to announce to our readers that our Canadian friend and brother was elected to the honourable position of President of the "American Dental Society of Europe," at the meeting held in Paris last August.

It will also gratify our readers to see the name of Dr. Patton on the outside cover of this Journal, as Corresponding Editor, and also to have the contribution read by him at the Paris meeting.

A Historical Document.

Under the head of "Selections" we print a historical document of great interest to the Canadian profession, from the *Cosmos* of December, 1860. The late Dr. A. Bernard, in 1842, made a fruitless effort to obtain some legislative protection, but there was nothing of a practicable character until this original effort of Dr. Brewster's. It is specially interesting to Ontario practitioners, because the chief correspondent with Dr. Brewster was Dr. B. W. Day, of Kingston, who getting his inspiration in this way, became the father of Ontario Legislation, seven years afterwards. We print the document just as it appeared in the *Cosmos* with the remark of Dr. White, then its editor.

In retiring from office after twenty-one years of unceasing effort on the Quebec Board, Dr. Brewster may justly feel that he has earned the respect of *confreres* in both Provinces, as he enjoys the affection of those who have all that time been intimately associated with him.

Our Advertisers.

Breaking stones, or driving a street car, would "pay" better than publishing a Dental Journal in Canada. Nobody ever thought of making this Journal, or its predecessor, a paying investment. It might be made to pay if it would become the advertising monopoly of one firm, but it never will. Were it not for the advertising pages it would be a heavy loss to the publishers, even though almost every Dentist in Canada is a subscriber. The Publisher is under obligations to those who advertise, and the Editors have no hesitation in asking Canadian Dentists to give them the preference when they can.

Legislation in New Brunswick.

Coincidentally with the letter from a lady correspondent, we have received from Dr. Murray, Moncton, N.B., the preliminary draft of a proposed Dental Act for New Brunswick, providing for the organization of the New Brunswick Dental Society, with a Council composed of seven legally-qualified practitioners, "who have obtained a Degree from some recognized College or University of Dentistry." With the general provisions of the Bill we are in hearty sympathy, but we object decidedly to a number of gentlemen possessing foreign degrees constituting themselves a council to compel New Brunswickers to attend foreign colleges and obtain a foreign degree in order to be "qualified" to practice in a Province of this Dominion. It is no reproach to New Brunswick that it does not yet possess a Dental College. The numerical strength of the Profession there, as well as the demands of the public, do not justify an effort of the kind. But with the example, for many years, of Ontario, and that of Quebec, Manitoba, and British Columbia, we can see no reason why our friends who ask Legislative protection for themselves should not be willing to burden themselves with a like responsibility, without forcing British residents to a foreign country, in order that they may have the privilege of practising in their own.

There is another and even more serious objection. Hundreds of graduates of the colleges to which our New Brunswick students would be forced to go by this law, obtained the D.D.S. in one session of a few months, without any matriculation, and without

any previous practice. This fact was so glaring and so openly practiced that many of our best men discarded the D.D.S. to their name. Some of them still refuse to use it. The Profession is crowded with scores of humbugs possessing this degree. It was given by English-teaching Dental Colleges to men who could not speak a word of English, and it was given to students who gave promissory notes for their course and never paid them: it is held to-day by a large number of men whose personal and professional reputation are about as low as they can be. True, it is held by our worthiest and noblest. It is honored by being held by devoted students and scholars. But is it at all likely that New Brunswick will attract the latter? We know what our fees are in comparison with American cities and towns. The experience of Ontario and Quebec ought to suffice to prove that applications, by the New Brunswick license from the United States, will be made almost exclusively by the D.D.S.'s of no repute, and no doubt by some of ill-repute. The only safeguard of the professor, as well as of the public, is a Provincial Board of Examiners, accepting college tickets as any equivalent they like, but compelling all applicants to submit to examination, *both* preliminary and practical. It cannot entail much trouble, and if the promoters of the Act are sincere in their desire, as we are sure they are, to elevate the standard of education in New Brunswick, they certainly ought not to humiliate their Province by driving students to foreign founts for knowledge. To encourage attendance at any well-equipped college is a different thing. But we believe it would be unconstitutional as well as unfair to say to a Canadian, "we have no Dental College in the Maritime Provinces, and if you want to practice here you must bring us a foreign diploma," Our New Brunswick friends have lots of pluck. Let them have self-reliance, too.

"The King and Queen of Dentistry."

We commend this latest addition to the professional quackery from over the border, to our Maritime Province friends who want to put a premium upon foreign qualifications, and a penalty upon "home manufacture."

A party using an *alias* writes with the above heading from New Glasgow, N. S., saying he has practised in Massachusetts, Nova Scotia, New Brunswick and Canada! What I would like to know

is what would the costs be for me to obtain a certificate, for I wish to settle down in Montreal. I've passed before the Commonwealth of Massachusetts Board of Registration in Dentistry. He heads his letter "from Montreal," evidently to delude the inhabitants outside. He suggestively adds, "I pronounce my name as —— (giving an English name) in English, although it is —— (giving a French name which has no association with that in English).

The Quebec Act would give this Royal Humbug a snug little surgery in the city jail. Some of our New Brunswick friends may be perhaps disposed to give him a Provincial license because he possesses a foreign degree.

The Penalties of Office.

One of the inevitable penalties of prominence is a share of unfair and sometimes malicious criticism. Good-natured people who never indulge in personalities about men who occupy humble positions, instinctively set them up as a target the moment chance or ability gives them the precedence. Count the number of truly unselfish men who come to the front out of office, and do their best to help their leaders, and how they dwindle in comparison with the army of obstructionists. To do many a man credit, however, there are some whose nature is retiring, and who have no thought of hindering a good work, but who prefer to co-operate by silent and unobtrusive assent. When shrewd statesmen are pestered by obstructionists of a serious stamp they give them a Government berth to quiet them, and there is no better way to take the wind out of the sails of a demagogue than to put him into office. Yet there is an element of danger in this. Look, for instance, at the political tramps which infest the Province of Quebec: the host of briefless barristers who starve in their legitimate occupations, but who, like Sancho Panza, think themselves fit for government. Men who utterly neglect their only means of existence: who have been professionally bankrupt: for whom public subscriptions were not long ago raised to pay their rent, fuel, etc., within a few months after filled positions at not very extravagant salaries, yet who seem by the profuseness of their wealth and the luxuriance of their surroundings, to have discovered some magical method of "raising the wind." The Province is politically as rotten and corrupt as these men can make it. Even religion is dragged in the mire to promote:

the political ambition of these office holders. There is no punishment bad enough for such corruptionists; but they will hold office so long as they can live on the credulity of their simple-hearted people.

Happily, professions are rarely as contaminated as politics. The leaders of thought and action, as a rule, are unselfish. There is no "boodle" in professional honors or offices. Some men's envy carry them to the extreme of accusing hard workers of working for their own interests when they are paid to give the best of their thought for a profession: but they would not undertake to occupy their position for double the reward. Men who spend much of the time they ought to give to their profession in preparing themselves to become teachers; who make themselves more efficient as such than their detractors; who give their very leisure to study and thought for their profession, frequently have the penalty of unfair criticism to pay. Yet what grumbler would willingly undertake to do their work?

It is one of the vices of this continent—a thing very rarely found in Europe—that arrogant pretension can foist itself into prominence when merit and modesty have to sit in the rear. So well is this known as one of the successful elements of social, political and sometimes scientific promotion, that many men make it their chief, if not their only aim. Yet there are teachers and leaders who do honour to the profession they represent. If it is thought they do not or cannot, they should be deposed. If it is known they do, they should be loyally followed.

A Personal Explanation.

The Montreal editor wishes to say, in reference to a published statement that "he has secured the agency for Montreal" of a new patent, that he has done nothing of the kind. In fact, he positively refused any such offer, or any privilege which would not be equally extended to every other dentist in the Dominion. Learning, however, that a party intended to obtain a monopoly of what may or may not prove to be a useful invention, the Editor of this Journal checkmated the effort for the benefit of his confreres; but he receives neither discount nor favor of any kind. Instead of securing any privilege or monopoly for himself, he has enabled every practitioner in the district named to enjoy "equal rights."

Our College.

A correspondent in our last issue criticizes the College in relation specially to its "Museum." The responsible officers are not in the least thin-skinned, and will, we are sure, not object to fair criticism. But it strikes us that they might turn the tables and criticize their profession, and especially their former students. The provision is made for a museum, but it is the business of the profession to furnish it. The fact is, we want more patriotic interest in the College.

Reviews.

A TEXT-BOOK OF ANIMAL PHYSIOLOGY, WITH INTRODUCTORY CHAPTERS ON GENERAL BIOLOGY, AND A FULL TREATMENT OF REPRODUCTION. By Wesley Mills, M.A., M.D., L.R.C.P. (Eng.), Professor of Physiology in McGill University; over 500 illustrations; New York: D. Appleton & Co., 1889; Montreal: E. M. Renouf. Professor Mills fully realized that in succeeding to the chair in McGill, vacated by Dr. Osler, he had a difficult task before him. No man could possibly put more enthusiasm and solid sincerity into his specialty than Dr. Mills brought to bear to secure the confidence of a critical Faculty and the respect of intelligent students. The result of his love-labour is seen, not only in the valuable work before us, but in an unremitting devotion, day by day, to concentrated investigation and research.

It is much easier for a full and enthusiastic teacher to amplify than to condense, and it will be gratifying to the busy practitioner, as well as the student, that Prof. Mills has wisely put his subject in a succinct, as well as interesting manner, that tempts one to read all when beginning to read any. His work improves upon other physiological works by being founded on the comparative method. It introduces biological science, and ventures into some of the most fascinating avenues of scientific study. It does not play with facts by the light of fancy, but it embellishes known facts by literary polish and excellent illustrations. The illustrations alone are worth double the price of the book. It bears out the author's reputation for original research, and it defers to recognized and recent knowledge. Among modern contributors to original research the author must be classed; and one of the chief features of this work is the certainty that it will revive among practitioners who have perhaps abandoned any full reading on physiology, an interest in the

subject. To students, it is the indispensable book of the day. It has been adopted as the text-book in McGill. The Quebec Dental Board has also adopted it, and we warmly recommend it to all Medical and Dental teaching bodies, for the clearness with which the author handles his life-work, for the beautiful typography and illustrations, and for the fact that there is no other one work in existence which as fully, and yet so succinctly, covers the field it occupies.

DENTAL MEDICINE: a Manual of Dental Materia Medica and Therapeutics. By F. I. S. Gorgas, A.M., M.D., D.D.S. Third Edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut St. (E. M. Renouf, Montreal), 1889; cloth, \$3.25.

Messrs. Blakiston have a well-merited reputation for their standard works for dental students and practitioners. Almost a complete dental library may be selected from their list. We do not think the "approval" of the National Association of Dental Faculties has in every case been judicious, in the selection of text-books for use in the schools of its representation. In some measure the movement has brought forth considerable plagiarism, and a lack of originality in matter and illustration. Bond's Dental Medicine was a good old stand-by in its day, and to a large extent a liberal contribution to our literature. The work of Dr. Gorgas, fills a niche very much felt by American colleges. Its 427 pages include introductory chapters on the action of medicinal substances; inflammation, digestibility of foods, weights and measures, topical remedies, the endermic and hypodermic methods, setons and issues, genera, and local blood-letting, doses, poison, the pulse, etc., etc. The Materia Medica and Therapeutics, are very complete from acacia to zinci sulphas.

We have just one fault to find with the author; a fault which is repeated in this third edition. He gives a list of forty-two authorities consulted, but both in the prefaces to the three editions, and in the list of authorities, he entirely overlooked the deep obligation he owed to Mr. James Stocken, L.D.S., England, author of the *Elements of Materia Medica and Therapeutics with Pharmacopœia*, published by Churchill, of London, in 1877, and appearing as a third edition before Dr. Gorgas' first. The close resemblance between the work of Mr. Stocken and that of Dr. Gorgas, is no detriment at all to the latter, but evidently our worthy friend of Baltimore, forgot when acknowledging his obligations to a long list of other authorities, the chief of the clan residing in London.

DENTAL CHEMISTRY AND METALLURGY. By Clifford Mitchell, M.D. Chicago: W. T. Keener, 96 Washington Street, 1890.

When the modern dental student discovered, on the shelf of an old bookstore, a copy of Piggott's Dental Chemistry and attempted to reconcile the chemistry of the past with that of the present, he perhaps got one of the best lessons in the scientific progress of the Profession within the last thirty years. We have hardly yet attained to that position when chemistry for the dental student will be distinctive from that of the medical student, but anyone familiar with the investigations of Dr. Miller, of Berlin, and other thoroughly scientific chemists, must admit that chemistry has become an indispensable adjunct, not only of the education of the student, but of the every-day active practitioner who seeks to improve the problems of practice. When Dr. Mitchell issued the little predecessor of this work, it seemed at once to fill a gap; but this enlarged edition is specially valuable, inasmuch as it has been rewritten, and is not a rehash. It includes the essentials of chemistry for dental students, general chemistry for dental practitioners, laboratory course in elementary chemistry for dental students, laboratory course in dental chemistry and metallurgy. Besides a concise arrangement of chapters on physics, chemical philosophy, inorganic chemistry, organic chemistry; the chapters of special interest to the dentist in practice are those on the Saliva, its physical characteristics, functions, etc.; the progressive experiments arranged by Prof. Salisbury, and chemical work in the dental laboratory, and complete course in salivary analysis. There is a freshness in this work which does not encroach upon any other of the many volumes added to our literature. It has been adopted as a text-book by the American colleges, and we recommend it strongly for use among our Canadian students and practitioners. It is beautifully printed and a credit to the publisher as well as the author.

TRANSACTIONS OF THE ILLINOIS STATE DENTAL SOCIETY, 25th Annual Meeting, May 13th to 17th, 1889, Chicago, H. D. Justi. There has always been a western freshness and independence in the proceedings of this Society. The Report of the Committee on Dental Science and Literature makes it lively for some of the recent additions to American dental literature: protests against the advertising cuts; the rehash of old magazine articles; obsolete methods of practice; improper use of technical terms, and,

in fact, is very much more condemnatory than even Mr. Servill's reiterated opinion in our last number. There is a good deal of valuable matter, which we hope to draw upon.

DENTAL METALLURGY: A Manual for the use of dental students, by Chas. J. Essig, M.D., D.D.S., Professor of Mechanical Dentistry and Metallurgy in the Dental Department of the University of Pennsylvania. Second edition, revised. Philadelphia: the S. S. White, Dental M'fg Co., \$1.75; sent by mail on receipt of price.

Any one who has listened to Dr. Essig's lectures would expect to find in this valuable little work, a sensible and practical digest of all that is absolutely necessary for the dental student in this primary part of his studies; and as every wise man is a student, though he may have been in practice half a century, it is a book useful to everyone in the profession.

We believe that very much more attention is given in the mother country to training students thoroughly in this branch, than is devoted by dental colleges on this continent. Students are too much in a hurry to become operators. Most of them have cause to regret it, when the demands of a general practice fall to them. Dr. Essig's book should be thoroughly digested by every dental student.

A CHARMING SOUVENIR.—*The Youth's Companion* Double Christmas Number is a charming souvenir. Its delicately-colored cover encloses a wealth of stories and pictures that are intensely interesting to readers of all ages. Some of the features are:—"Christmas in a Wagon," by J. L. Harbour, a story of pioneer life in the Rocky Mountains; "A Double Decker," by Mrs. Frank Lee, a story for the boys, and another for the girls, entitled "Beth's Memorial Stocking," by Mrs. H. G. Rowe; an interesting description, by Emory J. Haines, of the famous "Minot's Ledge Light;" Arabella B. Buckley's "Sleep of Plants, and What it Means;" "Attacked by Cheyennes," by K. L. O. F. Wolcott, a story of wild western life; "A Christmas Night's Sensation," by Clinton B. Converse, and "Alice's Christmas," both fresh and appropriate to the season; highly beneficial editorials on "Thoroughness" and "Stanley's Return," with a beautiful page for the very young children, together with anecdotes and bits of fun, combine to make a complete treasury for the whole family.