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THE
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VOL. II.]

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[No. 7.

ORIGINAL COMMUNICATIONS.

EDITORIAL NOTES ON PRACTICAL SUBJECTS.

THE HAND Mallet IN FILLING TEETH.

BY W. GEO. BEERS, MONTREAL.

Read before the Dental Association of the Province of Quebec.

I once had the pleasure of sitting, Gamaliel like, at the feet of Dr. Atkinson of New York, in his office, watching him filling with the aid of the hand mallet, which he introduced to the profession in 1861. Although I had previously seen it used by good operators in the United States, and had used it myself to some extent, I never had entire confidence in it until I witnessed Dr. Atkinson's operations.

There is something inoculative in the enthusiasm of a man of genius who rides a hobby, especially if that hobby is acknowledged by competitors to be a great step towards perfection in any sphere of labor. More especially is this true if the enthusiast also happens to be the inventor. The result has been that after receiving this stimulus I persevered in the use of the hand mallet, and now adhere to it almost exclusively. I am fully convinced that its judicious use is capable of producing superior fillings to those done by hand pressure, and I will endeavour briefly to lay before you some of its merits, as well as every demerit I know it to possess; my object being, not to accumulate arguments to sustain my *penchant* for it, but to elicit truth, and the best means to success. I would premise, however, by saying, that while strongly advocating the use of the hand mallet, I can fully appreciate the real excellence of operations achieved with

hand pressure, more than a quarter of century old; and that when looking at gold fillings standing perfectly good to-day which were inserted many years ago, with very meagre facilities compared to those we now enjoy, we cannot but recognize the fact, that what was capable of being done under such circumstances in the olden time, is even more possible at present, with our improved means. But this is no more a reasonable argument for adhering to hand pressure, than that we should keep to the old key of Garengéot because it was successful in the hands of the old operators. If such a principle were held, there would be an end to all progress in the profession.

Without attempting to discuss the various principles concerned in preparing cavities, and filling, I will merely refer to one important consideration, viz.: that all other conditions being efficiently fulfilled, the more uniformly dense the gold, the better, in all probability, will be the operation. Now whether we consider the plan of consolidating each piece of gold as it is introduced, or a large body of metal which has been loosely placed in a cavity for condensation *en masse*, or the final condensation after the cavity has been completely and firmly packed, it stands to reason that the mallet will subserve the object much better than the pressure of the hand and arm. In principle it is analogous to a nail driven into a board. The most powerful hand alone could not force a nail to any extent into the wood; but the impaction of a light hammer in the hands even of one of inferior muscular development, will easily drive it up to the head. I have frequently used the mallet on hand pressure fillings of the best operators, which fillings were to all appearance solid and flush, and have invariably succeeded in driving them in, so as to be compelled to renew their fullness. By weighing the pieces of gold before introduction, I found in several instances, that I could condense these fillings, so as to enable me to put in from a quarter of a grain to three grains more gold, according to the size of the original filling, and the circumference of the mouth of the cavity. It will be easily understood that the greater the circumference of the orifice of a plugged cavity, the more easily could the contents be condensed in this experiment; and that the latter is also facilitated by convenience of access, and the strength of the walls.

Several months ago a trial was held in Boston, between automatic mallet force and hand pressure, to determine the difference of density,

with the following result. The space filled was the same in both tests. The foil used was adhesive, No. 3, in half-sheet peices.

Hand pressure.—Number of thrusts, ranged from 171 to 318 to the half sheet. Time, 1 hour and 34 minutes. Weight of filling, 24 grains. Automatic mallet.—Number of blows, ranged from 130 to 275 to the half sheet. Time, 1 hour and 8 minutes. Weight of filling 28 grains. Comparisons are suggestive.

I abjured the automatic mallet, because of the trouble of changing the plugger points, and their unsteadiness in the socket. I found too, that the hand mallet was less objected to by patients, and above all, that with it I could operate more to my own satisfaction. A few more of the advantages of the hand mallet may be thus enumerated. 1st. The operator has more control of the patient, and his foil. 2nd. The labor is less exhaustive than the muscular manner used in hand pressure, and it is certainly easier for the patient. 3rd. You can build up crowns, which could not be done as perfectly, if at all, by hand pressure. 4th. There is no danger of the plugger slipping. 5th. In some places where the pressure of the hand is weakened by the difficulty of access, the taps on the head of the plugger will condense the gold more effectually. The mallet has also been the means of enabling poor dentists to lay in a stock of the best instruments, by making ivory and mother of pearl an utterly useless article for handles. The consequence too, has been, that there is more attention paid to the useful, and less to the ornamental, in the manufacture of pluggers.

The difficulties associated with the use of the hand mallet, may present themselves in different aspects to different operators; but we must remember that hand pressure is by no means devoid of embarrassment, and that excellence in operating by either method is always attained by overcoming impediments, and mastering not only the elementary principles, but the various anomalies which are brought before our view.

1st. The necessity of having an assistant is to some operators a strong objection, both on account of the extra expense of labor it may involve, and the possible or actual objection shown by certain patients to the presence, near the chair, of any other than the dentist. For awhile I tried using the mallet myself, by reversing the recent improvement of seven inch pluggers, and cutting them as short as three and a half, so that I might have the plugger and the mallet nearer to each other, and more under control of my hands. I found

by shortening the plugger, too, that there was no danger of missing the stroke ; as when using the seven inch, and keeping the eyes fixed on the cavity and the gold, the tapping was often guesswork, and the blow very irregular. In difficult cavities, however, I found myself entirely unable to do justice to the work, and I abandoned the short pluggers. The objection to an assistant may in most cases be removed by a little explanation of his value, previous to his appearance, and during the operation he should be kept as much behind the chair as possible, in cases where patients are unreasonably prejudiced. It is much better, however, that the assistant should be able to see the point of the plugger.

2nd. Having obtained and trained an assistant, your work is at a dead stop in the event of his absence, as much as the sound of an organ in the absence of the boy at the bellows.

3rd. There is danger of the assistant executing a sort of cadence in malleting, instead of taking time from the indications of the operator. I had a lad whose musical propensities were so often aroused by the monotony of his work, that I often fancied I could detect in the variation of his blows, an imitation of the air of "Cheer, Boys, Cheer!" I dispensed with his services in double quick time.

4th. There is considerable risk of fracturing enamel and edges, and somewhat more risk in frail cavities than with hand pressure ; but, as I said before, these risks are associated with all methods of filling, and an operator who cannot regulate and avoid these contingencies with the mallet, had better never use it. Very much depends upon your assistant. According to his intelligence and practice, should your care be. To increase and diminish the impactive force is much easier with the hand than the automatic mallet, if your assistant is well trained. I regulate this by numbering strokes, 1, 2, 3, 4, and make the assistant begin by 1 strokes, at sufficient intervals of time to enable me to control the gold, and use a little hand pressure ahead of the mallet. Great care is necessary to regulate the intervals, so that the stroke will not be delivered too soon. The variations of blow may be regulated by the words light, hard, harder, slow, quick, &c., as the operator may see fit. A simple nod of the head may be used as an indication of the time to strike, if the assistant is not well enough trained to judge for himself. The blow should be a sudden, springing tap, direct upon the end of the plugger. The handle should be screwed tightly into the head of the mallet.

5th. I find it almost impossible to depend as entirely upon mallet force in the posterior approximal cavities of the second and third molars, as in other cavities, unless an opening is made through the crown. It must be remembered that there is always a certain amount of hand pressure used immediately in advance of the blow, under all circumstances; but there are difficult cavities in the above two teeth in both maxillaries, wherein I have no faith in the exclusive use of the mallet. A strong point against the hand mallet is thought to be in the assertion, that the direction of force is on a line or parallel with the shaft of the plugger, and that a curved point cannot be steadied so as to give a firm impaction of the gold, but must necessarily glide off, or over the metal. In opposition to this argument, the advocates of mallet force hold, that an instrument bent at any angle, can be controlled in difficult cavities by a strong hand pressure on the gold at the point desired, steadying the point of the plugger to resist the direction of the blow, at the moment the mallet is used. The advantage of the mallet is shown in just such cases; as after the force of hand pressure has been exhausted, further condensation with the aid of the mallet may be made.

Dr. Atkinson has substituted a metal head in the mallet, in place of lignum vitæ, from two ounces and a half up to ten or twelve. Pure tin, tin and lead, and composition metal have been used, but I prefer pure lead, as the vibration is less, the spring tap duller, and it is easily renewed. In almost every case, I have tested the wooden and lead mallets upon the same patient, and with only one exception, the preference was given to the latter. I believe I was the first to use it in Canada, and before it appeared in the dental depots, and my humble experience is identical with that of Dr. Fitch, who said that if he had to go back to hand pressure, he would abandon dentistry.

DENTAL HYGIENE.

BY M. POURTIER, QUEBEC.

Read before the Dental Association of the Province of Quebec,

January 20th, 1870.

From time immemorial and among all civilized nations, medical practitioners, physiologists, naturalists, philosophers, poets, and phy-

siognomists have been preoccupied with the study of the mouth, its hygiene, and the preservation of the teeth therein. We even find in the Bible several passages which prove that the buccal science had made great progress among the Hebrews. In the book of Solomon's proverbs, many passages can be found applicable to buccognomy. In the 13th chap., and 30th verse? the King, prophet, and naturalist says: "He who nourisheth evil designs with a quick and piercing eye, exhibits his evil intentions by biting the lips;" further on he exclaims: "Wisdom shines in the mouth and on the face of man,"—"We know," said he, "a person at first sight, and can discern by his facial appearance the man of sense; the investment of the body, the smile of the teeth, the bearing make known what he is!" The same Solomon says, in the Song of Songs, in speaking of the Queen of Saba: "Your teeth are white like unto a flock of young lambs lately tended, and issuing from the bath." Thus, we conclude, that among the Hebrews buccal science, in its general relation to physiognomy, had made great progress since we discover it mentioned in the *Sacred Book*.

Among the Egyptians each part of the body had its specialist; and the *mouth* occupied one of the highest grades in their surgical and hygienic studies. Some length of time before Hippocrates, the medical practitioners and surgeons of Greece had given their attention and cares to the mouth, and from thence commenced the investigations into buccal physiognomy. The celebrated Hippocrates, in his works, has left us the most brilliant theories on maladies of the buccal cavity, and on the assiduous care which the different portions of this organ exact. The philosopher Lucien also thought deeply on the importance of buccal studies. In speaking of the beautiful and incomparable Pentheus, he cried with enthusiasm: "How can I paint the beauty of her *teeth*, which were shown so in her smiles? So white, even, pressed the one against the other, they presented to the delighted eye the simile of a magnificent collar of pearls, they were the mirror of her heart, the reflector of her soul!"

The poets of the "great epoch," that is to say the Augustine age, boasted and sung of the mouth's charms, and inveighed indignantly of the negligence with which the ladies of that period treated their teeth, gums and lips. It will suffice to convince every one of the magic influence exercised by a well formed and well preserved mouth—Ovid says in his "Art of Loving," in speaking of a young and beautiful woman: "I recognize your careful and intelligent habits,

in the pearly whiteness which shines from your mouth," again, "Oh! how delightful the attraction of a rosy mouth, garnished with beautiful teeth! The lips' movements during a smile harmonize so admirably with the dental arch, with the sparkle as with the langour of the eye." The Roman and Athenian ladies were aware of and appreciated these advantages, and knew how to aid nature when deficient, or to repair the ravages of disease by calling to their succor and having recourse to all hygienic resources for the mouth. Permit me, gentlemen, to allude slightly to the celebrated Lavater, our superior in many things—we who glean after him the fields of physiognomy, should bow respectfully to this great man, who, the *first* devoted his attention and studies to the "human mouth" specially, and the result of whose investigations will be of great moral and scientific influence. He, it was, who first stated that physiognomy and consequently buccognomy should be the means of uniting hearts so that friendship should have no more solid foundation. In fact, how many mouths do we not meet which repel friendship and seem as little formed to express this sentiment as to inspire it—are there not many, on the contrary, which bear a character of candour, of goodness, of affection, to which we cannot refuse to place confidence. LeBrun, painter to Louis XIV, had said, *before* Lavater, "The mouth is the part which, of all the face, indicates the most particularly the emotions of the heart."

Thus, you perceive, gentlemen, by what has been said, that even the most ancient poets agree in lauding to the highest degree the cares which should be given to the hygiene of the mouth. Then, the *teeth* as well as the other parts of the mouth, of which they are the most precious ornaments, demand of necessity the same care, the same vigilance of each day—for propriety in this respect is indispensable, not only to preserve the charms of the mouth, but the *health* as well. A celebrated doctor has said: "The fetid odours of the mouth are classed among the causes sufficient to procure a divorce."

Let us pass, now, to the "toilet of the teeth." The care which we should give to the toilet of the teeth is very important, inasmuch as it tends to their preservation, not only in health, but in all their natural beauty. We should wash the teeth at least once per day, immediately after rising, in order to remove the mucous deposits formed during sleep, and even again, night and morning, taking off thus the fragments of animal food, in fact any alimentary remains which during the night communicate to the mouth a very disagree-

able odour. After sickness, when notwithstanding all the precautions that could be taken, tartar has formed on the teeth, it should be removed without fear, by a dentist worthy of confidence. It is a mistake to fancy that this small operation is injurious; the enamel, when not defective, is much harder than the instrument, the steel glides, and removes the tartar without even attacking the polish of the tooth. The only fear is of falling into the hands of a dentist who is too hasty and careless in his work, or who to abridge his work makes use of some acid which dissolves the tartar, but attacks the tooth which it whitens for a moment, but which brilliance soon vanishes to leave the organs much yellower than before. Even without it being absolutely necessary, I believe that careful persons should have their teeth cleansed and scraped once every year at least. The brush can not be used everywhere, and notwithstanding the greatest care, there forms at the posterior or lingual portion of the inferior incisors a layer of tartar that the instrument of the dentist alone can remove. This slight operation causes the dentist to examine, in order, the teeth one by one, he discovers then from the beginning the least defects, and can immediately remedy them, as the evil being perceived in time can most always be arrested. Too acidulated dentrifices must be evaded as *poison*, and, in fact, most of the elixirs whose composition is unknown.

The teeth must not be treated in excess of propriety, if they are not naturally white do you imagine you can force nature and make white alabaster from grey or yellow; therefore, have care of the teeth, but do not exceed what is required by nature, it would be very imprudently doing harm to those organs.

Wealthy persons should be counselled to choose their food with great circumspection. I will recite on this subject, this line of Horace: "A proud tooth eats not common viands." Vegetable food is generally much more favorable than animal for the preservation of the teeth. Naturalists and travellers advance the statement that carnivorous people lose their teeth at an early age. Salt food, above all, should be abstained from, as its action is considered by Medicine and Surgery to be very injurious to the buccal organization—salts corrode the gums, destroy the enamel and engender scorbutic affections. We are frequently asked if sugar is really injurious to the teeth. I have always answered that the sugar, which is bought at the grocers, could be the cause of the least injury; but it was not

the same with that vended by the confectioners, as very often, very injurious substances were introduced into it.

Women when occupied with the many cares of the toilet, habitually hold between the teeth the pins used for adjusting their laces, collars, etc. It is a very injurious habit—in fact the reiterated contact of the pins wears away, very soon, their teeth.

During the dancing parties of the winter months, Ladies, young and old, are accustomed to exhibit themselves in the halls, drawing-rooms etc., dressed in robes of fleecy gauze and ornamented with flowers etc. The coquetry, inherited from Eve, our common mother, causes them to forget the rigors of temperature. Little care they! They desire to shine! Very well, let them know, if they are ignorant of the fact, that the sudden changes of temperature, can exercise, on the teeth principally, the most injurious influences during the menstrual period. Hippocrates in his 18th Aphorism, Section 5, says that cold is very injurious to the teeth. Experience has shown that that which injures this part of the mouth particularly, is the sudden transition from cold to heat, from heat to cold. This transition affects the enamel, and if we expose to the air the sensitive part of the tooth, caries very soon makes its appearance. The same effect takes place with porcelain.

These precepts are so much more important as the loss of the teeth occasion the strangest modifications on the general outlines of the physiognomy. Again the teeth are the key-beard of the voice—the orator Cicero, who dipped successfully into physiology, compares with reason the teeth to the chords of a lyre, the sounds of which can be more or less harmonious according to the perfection of the instrument. You must have noticed that persons who had lost the superior and inferior incisors are much changed in features, and that they pronounce with difficulty the guttural consonants. Then, these precious organs, without the double relation of utility and beauty, are subject like the other portions of our bodies to numerous diseases. These affection, more or less serious, depend some on the physical constitution of the individual, and others on nervous anomalies, defects in the mucous membrane of the mouth, occasioned by mercurial preparations, etc. Let us preserve then the distinction, the aristocracy of the mouth, the temple of speech and harmonious sounds, which hides so many secrets and reveals them with such unreserved confidence. Let us say to mothers of families,—O, ye mothers, pretty or handsome, who have no more cherished desire

than to see your beauty, grace and divine smile reflected in your offspring—quickly hasten and have recourse to dental hygiene, which alone can indicate the sure means of perpetuating your charms from generation to generation. Ye mothers who have received from nature the celestial gifts of beauty, do not forget that providence has established you guardians or rather depositors of an inappreciable treasure which should be transmitted to your children, above all to your daughters, in all its lustre, in all its purity. When the day arrives for them to choose a husband or to approve of one who has been chosen, remember the buccognomonic precepts—know surely, that the mouth as much as the eyes, is the mirror of the soul and even a revelation of the heart. At this price you will maintain the purity of your family, and when age commences its ravages; when your teeth drop one by one like leaves in early autumn, you will have the consolation to see yourself perpetuated in your little children, whose irreproachable teeth will remind you of the time when *your* mouth was also ornamented by thirty-two diamonds.

Notwithstanding all that has been said, we have also, gentlemen, a task as glorious and as important to accomplish in that which concerns the teeth and care of the mouth—and that task gives us the right, imposes on us, in fact, the duty of contributing our mite to Physiognomy.

AN ADDRESS

BY W. C. ADAMS.

TORONTO, January, 1870.

To the Members of the Dental Association of Ontario,

GENTLEMEN:—I take this opportunity to thank you for the honor you conferred upon me in appointing me as one of the delegates to represent our Association at the General (or as it was then National) American Dental Convention, which was held in 1868, at Niagara Falls. On arriving there, I found that their Constitution was so worded that they could not admit us as members, although most were in favor of doing so. A promise was made that they would change their Constitution and allow us to come in on an equal footing with other delegates, and members of local Associations; making it a general or continental Convention. There was much to interest

and profit those seeking for the truth; some of which I expected would have been reported by our Secretary, as he was there. Sickness in my own family prevented me from giving such as I could recollect through the Journal to you.

In our last July meeting, I urged the appointment of delegates pledged to go, that we should not even seem to trifle with those who had kindly offered to so change the wording of their Constitution as to afford us the privilege of joining with them. As no one else present would engage to go, I consented to, as of a duty, and was again appointed; and went and was admitted as a permanent member. I think it a very great privilege to meet with those gentlemen representing the *best* dental professional skill; men who are above truckling for position, power, or a name, or shirking duty for personal advantage and preferment.

I went to the Convention held at Saratoga Springs, N. Y., on Monday the 2nd of August last, and returned on Saturday the 7th, and found my first-born, Eliza Matilda had been taken ill on Friday morning previous. She died on Monday morning the 9th, *while her mother was still away from home*, of diphtheria; aged nine years, eleven months and six days. On the 13th, my youngest and third daughter, Kitty Isa Victoria, was taken ill, and died on the 19th, of inflammatory croup; aged six years, five months and six days. On the 21st of August my wife was taken down ill, and though yet spared to us, is not able to sit up.

Thus my watching and anxiety have prevented me from giving you some of the ideas of truth, and objects of research put forward by our friends of the General Convention.

PROCEEDINGS OF SOCIETIES.

ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

The regular meeting of the Board of Directors and Examiners of the College, was held at the College rooms, corner of Church and Court streets, Toronto, commencing at 10 a.m., on Tuesday, Jan. 18, 1870.

Members present—B. W. Day, M. D., L. D. S., President; J. O'Donnell, L.D.S., Secretary. C. S. Chittenden, L. D. S., Treasurer; T. Wood, L. D. S., Registrar; G. V. N. Relyea, L. D. S., C. Kahn, L.D.S., F. G. Callender, L.D.S., J. B. Meacham, L.D.S., and George L. Elliott, L.D.S.

EXAMINERS APPOINTED FOR THE SESSION.

Dr. Day, Anatomy ; Messrs. Wood and O'Donnell, Dental Surgery ; Callender and Chittenden, Operative Dentistry ; Relyea and Meacham, Mechanical Dentistry ; Elliott and Kahn, Institutes of Dentistry ; O'Donnell, Physiology ; and Kahn, Chemistry.

Mr. O'Donnell gave notice that he would move before the close of the session a resolution respecting students articulated subsequently to the passing of the Act.

Mr. E. Patterson, of the Village of Glasgow, Ont., was granted a license to practice, he having furnished the necessary information as having had five years' established office practice previous to the passing of the Act.

The meeting then adjourned, after which the written examinations commenced.

EVENING SESSION.

The following gentlemen being British subjects, but non-residents of the Province, were granted the honorary degree of L.D.S. :— Messrs. A. Bernard and W. George Beers, of Montreal, President and Secretary of the Dental Association of the Province of Quebec ; Joseph Maurice and Walter John Woodman, of London, England ; George Gilbert, Gibraltar ; W. H. Thorner, of Chili, South America ; and Wm. J. Newman, Liverpool, England, Dentist to the Liverpool Dental Hospital.

THURSDAY'S SESSION.

The President in the chair.

The following gentlemen were granted licenses to practice, having passed successful examinations :—J. H. W. Bedford and M. D. Ward, of Belleville ; D. H. Platt, Picton ; and W. H. Cannon, township of King.

In addition to the gentlemen appointed at the last meeting to prosecute persons practising dentistry without license, the following were appointed :—Charles E. Pegley, Chatham ; Henry Thornton, St. Thomas ; T. W. H. Willson, Bradford ; B. C. Davy, Napanee.

FRIDAY.

In pursuance of a notice given, the following resolution was adopted :—

On motion of Mr. O'Donnell, seconded by Mr. Chittenden, "That

in order that students may get a dental education necessary to the requirements of the profession and wants of the public, all who have become articled subsequently to passing of the Act of March 3, 1868, be obliged to attend the required terms in the Royal College of Dental Surgeons, before this Board will admit them for examination, unless they can give satisfactory proof of having attended the same time in some recognized, chartered Dental College."

The second election of a Board will take place in this city on the second Tuesday in June next, at 7 p.m.

After other routine business, the meeting adjourned.

TORONTO DISTRICT DENTAL ASSOCIATION.

A meeting was held in the St. Lawrence Hall on Wednesday, the 9th inst., for the purpose of organizing a social Society, the same to consist of the city of Toronto, the towns and villages north and east, including the towns of Peterborough and Cobourg.

At 2.30 p.m., Mr. Rowe was called to the chair, and Mr. J. B. Howe was requested to act as Secretary. The following gentlemen were present:—J. O'Donnell, L.D.S., Peterborough, Secretary of the Royal College of Dental Surgeons; F. G. Callender, L.D.S., Toronto, S.M.S., member of the College; Thos. Rowe, M.D., L.D.S., Cobourg; J. C. McCausland, L. D. S., Barrie; N. J. Peck, L. D. S., Richmond Hill; Henry Robinson, L.D.S., Schomberg; W. H. Aghew, L.D.S., Lloydtown; M. Pearson, Newmarket; M. E. Snider, L. D. S., W. Myers, L.D.S., R. G. Trotter, L.D.S., George Elliott, L.D.S., W. C. Adams, L. D. S., and J. B. Howe, L. D. S., Toronto; A. Robinson, Aurora; T. J. Jones, L.D.S., Bowmanville.

Moved by Mr. O'Donnell, seconded by Mr. Myers, that the following be a Committee to draft a Constitution and By-laws, and that they report at 7 o'clock this evening:—Messrs. Callender, Myers, Jones, H. Robinson, and McCausland. Carried.

On motion of Mr. Peck, seconded by Mr. Myers, that Mr. O'Donnell's name be added to the Committee, and the Chairman requested him to act as Chairman of Committee.

Dr. Rowe in the chair.

Mr. O'Donnell, Chairman of the Committee appointed to draft a Constitution and By-Laws, reported.

Mr. G. L. Elliott moved, seconded by Mr. Howe, that the report

be not received, and that the meeting adjourn *sine die*." Withdrawn.

The report was adopted with slight amendment, after reading it clause by clause.

On the motion of Mr. Causland seconded by Mr. Snider, the meeting went into Committee of the Whole for the election of officers. Mr. Peck in the chair.

The following gentlemen were elected :—President, T. Rowe, M. D., L. D. S. ; 1st Vice-President, W. C. Adams, L.D.S. ; 2nd do. J. C. McCausland, L.D.S. ; Secretary, J. B. Howe, L.D.S. ; Treasurer, T. J. Jones, L. D. S.

Moved by Mr. O'Donnell, seconded by Mr. Trotter, "That the members of this Association do all in their power to bring to justice any and all persons practicing Dentistry illegally, and that funds of the society be placed at the disposal of the Secretary, who shall prosecute on information of any member of the Association." Carried.

On motion of Mr. O'Donnell, seconded by Mr. Adams, the President appointed the following a General Committee of Management for the year, with power to arrange subjects for discussion, hour of meeting, &c. :—Messrs. McCausland, O'Donnell, H. Robinson, Howe, Trotter, Jones and Brimacombe.

Moved by Mr. O'Donnell, seconded by Mr. McCausland, "That the next meeting of this Association be held in the town of Bowmanville on the second Wednesday in April next." Carried.

The Committee appointed the following to read papers :—Mr. Peck, Inflammation of the Gums ; Mr. Jones, Mechanical Dentistry ; Dr. Rowe, Operative Dentistry ; Mr. Snider, on Articulation ; Mr. Callender, Fang Filling ; Mr. Trotter, Clinic.

The meeting then adjourned.—*Globe*.

PENNSYLVANIA ASSOCIATION OF DENTAL SURGEONS.

At a monthly meeting of the Association, held Sept. 9, 1869, the subject of *oxychloride* of zinc was taken up for consideration.

Dr. Buckingham gave a condensed statement of the discussions had upon this subject at the Annual Meeting of the American Dental Association, held at Saratoga, in August.

Dr. J. Truman's use of this material was entirely experimental. The success that had followed justified its continued use. So far he had but few failures, and these did not involve the destruction of the pulp. They were confined to those cases where the pulp would not

tolerate the presence of the oxychloride without severe and continuous pain. In his judgment it will require years before any positive opinions, for or against, can be given in regard to its value as a material for capping.

Dr. Githens had used oxychloride of zinc for capping, and with some degree of success. For sensitive dentine, he had found it very valuable.

Dr. Wert thought this material was undergoing the same experience as amalgam. At one time wholly condemned as unfit for use, and then taken up and almost universally used. He had abandoned it as worthless for filling teeth, but since he had heard such favorable reports at Saratoga, he felt in duty bound to try it again. The subject was then continued for further discussion at a future meeting.

Dr. Githens presented a valuable specimen of four central incisors, the central and lateral of each side united. He had inserted a silver pivot, in amalgam, fifteen years previously. Recently, the tooth was thrown out of the mouth by an accident, and on examination, the silver pivot was found still firmly imbedded in the root.

Dr. Wert had succeeded in reimplanting teeth in a person of twenty-two years, and desired the opinion of members present on the policy of this operation.

Dr. Buckingham doubted whether it was possible for the nerve, once severed, ever to reunite. A tooth may be dead and still retain its color.

Dr. W. H. Trueman doubted the correctness of the theory upon which this operation was based, as in plastic operations the union must be kept up to insure success.

Dr. Jas. Truman said that this operation was a very old one, it being a favorite with the celebrated Hunter. Dr. A. Mitscherlich, of Berlin, had given a very full report of his work in this direction. The success he and other had met with, warranted us in performing it when needed.

OCTOBER 19, 1869.

The subject of oxychloride of zinc, continued from the last meeting, was taken up for consideration.

Dr. Buckingham had made some experiments, but they were not as yet satisfactory to himself. He could not determine its solubility in water, there being no test for moisture. Some absolutely washes out, owing, probably, to the condition of the saliva. It is soluble in

acids. The greater amount of acid the more solution. It absorbs large quantities of moisture. He used it for sensitive dentine, and fills pulp canals by placing it on the first piece of gold. It is mixed somewhat thicker than cream. In its antiseptic property it is fully equal to creasote. He had had some trouble in using it as a capping for nerves, and instanced a case where pain continued from eight to ten hours, and after extraction of the tooth found the pulp decomposed. He thought it was possible for oxychloride of zinc to preserve the pulp for years, and then, when its antiseptic properties have been lost, decomposition may ensue.

Dr. C. N. Peiree had not been a strenuous advocate for capping nerves. He thought a tooth with a live pulp of more value than a dead one. He had removed fillings of oxychloride of zinc, and found them in good condition. He had filled a number of teeth with it the past three months, and all as yet comfortable. In one of these there was a slight fungus growth of the pulp. He applied tissue paper, saturated with creasote, over the pulp previous to applying the cap. The patient had complained of shooting pains at a recent examination of one of these. He felt satisfied that the pulp was in process of destruction in this tooth. His success with paper, saturated with creasote, had been quite as good as with oxychloride. He was in favor of capping, if a reasonable hope existed of saving the tooth by that means, as the difficulties were many in filling roots. In the pulp canals he considered its use far preferable to creasote; owing to its antiseptic properties it would produce equally good results. For capping purposes he did not think oxychloride possessed any virtues over many other things. He reviewed the history of the operation of capping in its various forms. The apparent success in these made him cautious in regard to this capping. This material he deemed very valuable for use in those thin shells of teeth that would not bear any other kind. He had made some experiments in combining this material with metal filings, and also with amalgam, but was not prepared to give an opinion upon it, further than that the combination made much more solid fillings than oxychloride alone. After a test of several months no change had been manifest in those inserted. He exhibited several teeth filled in this way. Gold filings combined with oxychloride, the latter combined with amalgam; with the amalgam, mercury was used in the usual way.

Dr. Buckingham had used oxychloride to advantage in teeth to be filled with amalgam. He pressed the oxychloride against the walls

to prevent the amalgam from coming in contact with them. He also used it in front teeth with thin walls. He had not seen the teeth treated in this way since, and could not report results.

Dr. J. Truman's experience in this mode of practice had now extended over two years, and during the last year he had almost exclusively confined the treatment of exposed pulps to the process of capping with this material. From his observations, success depended, to a large extent, on the condition of the pulp at the time the application was made. Where there has been a congested state of the pulp previously, the pain will be much increased. In one recent case, so excruciating had this been, that he was obliged to remove and destroy the pulp in the usual manner. The best results had followed the capping of pulps recently exposed, and where no pain had previously been experienced. He had examined a number of cases where the oxychloride had been in from two to four weeks, and, with one exception, had found the pulps alive. In those cases, where most pain resulted, there was apparently no loss of vitality in the pulp. So satisfactory had been the results, that he felt satisfied to continue and wait the only true test, that of time. One filling that he had constantly under observation, had now been in ten months. The pulp was fully exposed at the time the cap was placed. The tooth remains in a perfectly comfortable condition, and apparently as healthy as the adjoining teeth. In his judgment, it was immaterial whether the pulp died or not, if the antiseptic properties of the chloride of zinc would prevent decomposition. The disintegration of the pulp produced, by its irritating effects on the peridental membrane, all the difficulties we had to contend with.

Dr. Buckingham stated that oxide of zinc was usually impure. If this is taken and recalcined it will set very soon.

Dr. Pettit had not had much experience. He had capped when possible. In one case the pain became so severe, in the course of two or three days, as to render extraction unavoidable. He had never filled permanently a tooth so capped. In one case, met with in Toledo, in a recent trip west, the dentist informed him that a slight pain, following capping of a tooth, induced him to examine it, when the pulp was found entirely destroyed, but with no signs present of decomposition.

Dr. R. Huey had capped nerves whenever possible. He had one case followed by severe pain, which, failing to relieve after several hours labor, he finally extracted it. He used the oxychloride to fill

a portion of the cavity, and had been very successful in bleaching by its use.

Dr. Pettit had one of his teeth filled by Dr. Truman over ten months ago. Pain followed for a few moments, each day, for a short time, and then gradually ceased.

Dr. Wildman had not used it for this purpose, as he had found, in former years, that the use of this article for sensitive dentine had often resulted in the destruction of the pulp.

Dr. Truman thought this an unfair conclusion. He had observed that the use of oxychloride, on a thin plate of dentine, covering the pulp, was attended by far more disastrous results, than when applied directly to it. The cause of this was not very clear to his mind, but the fact was indisputable.

Dr. Peirce thought this was owing to the fact that oxychloride would irritate and produce a congested condition of the vessels in the pulp. If these had no room for expansion, there would be increased inflammation and final destruction, resulting from the confinement within the dense walls of the envelope; on the other hand, if the opening was clear, the pulp would expand and the inflammation subside.

The subject was further continued to a future meeting.

NOVEMBER 9, 1869.

At a meeting of the Association, held for discussion, Dr. W. H. Trueman called attention to a new safety valve for vulcanizing, consisting of a brass tube containing fusible metal. He also presented specimens of copper, where explosions had taken place; also a tooth capped with oxychloride, and removed three years subsequently. The pulp had died in this, followed by alveolar abscess. This result he considered prophetic of future trouble in many similar operations.

Dr. Smedley said if this was prophetic of trouble, he was heaping up a large amount for himself in the future, as he had used it in a large number of cases with apparent success.

Dr. Buckingham stated some cases in the use of oxychloride. He could not see how chloride of zinc could be used and not produce destruction. Try it on the tongue, or on any other tissue, and the caustic effect will be painfully perceptible. He did not wish to condemn it, but felt it must result in the destruction of the pulp.

Dr. Smedley said, where pain had been excessive he had bled the pulp, and then filled. He had one tooth filled with this material in

his own mouth. Becoming uneasy from the statements made by prominent members in the profession, he had had it removed, and found the pulp still alive. He recapped, and it so far remains comfortable. This pulp had been treated three times with arsenical paste without success.

Dr. Wert remarked that it seemed to him that failure to destroy with arsenic would result in failure with any other material. Success, in his judgment, depended more on constitutional conditions than upon anything else, and, consequently, capping could not prove a general success.

He instanced a case of bleaching a discolored tooth, upon which he had tried all the different modes suggested without result. In desperation he attempted Dr. W. H. Trueman's process of applying nitric acid. The result exceeded his expectations; the change being very marked in a few moments. He subsequently treated it with bicarbonate of soda to neutralize any remaining acid.

Dr. W. H. Trueman instanced a case of exposed pulp. The patient refused to have the tooth extracted. After several years the tooth was again examined, when the pulp was found capped with secondary dentine. The individual was addicted to the use of tobacco, but he thought the conclusion hardly justifiable that the constant use of this would produce a re-development of osteo-dentine. This would be too much like those we often see arrived at in our journals, upon equally slender premises.

In regard to the use of nitric acid in bleaching, he would say, that he had studied its effects in teeth in his own mouth. He had found a few seconds sufficient to produce a change of color.

Dr. Wert explained his mode of manipulation. He used a gold instrument and pure nitric acid. The root was first filled tight with cotton. The nitric acid was kept in the cavity one minute by the watch. On removing the acid the cavity was freely syringed and dried. He then applied the bicarbonate of soda; after which cotton, saturated with creasote, was kept in the cavity for two days. Upon examination, the tooth was found as dark as before treatment. It was then syringed again, and the acid reapplied, allowing it to remain five minutes. The action was not as rapid upon the second application, but the tooth was restored to nearly its natural color. He had not seen the tooth since the last application.

Dr. W. H. Trueman called attention to the necessity of using chemically pure nitric acid. He followed the use of this by chloride

of lime, which would take up any remaining quantity of acid, and also continue the bleaching process. He also followed this with bicarbonate of soda and ammonia.

Dr. Buckingham had never known nitric acid used for bleaching, but had for the destruction of pulp.

Dr. Peirce said that the affinity between the acid and dentine would be very strong. It would follow the tubules, and remove the parietes and a large proportion of the tooth substance.

Dr. Buckingham remarked that this would be good theory if we knew whether the acid followed the animal matter of the tooth or removed the inorganic. Nitric acid acted upon animal tissue and gave it a yellow color. If the animal matter in the tubes is changed from a dark to a yellow the tooth will necessarily be changed. He considered the subject an important one.

In regard to the valve presented by Dr. W. H. Trueman, he could say he had but little faith in it. Fusible metal loses its character by a continued high temperature. The thermometer does not always indicate the amount of heat. This can be demonstrated by allowing a small escape of steam, when the mercury will rise suddenly a number of degrees. In some of the large factories they use something to keep the water in constant circulation. It is merely a question of time how long our vulcanizers will last. The period has about arrived when the first crop disposed of were beginning to blow up.

Dr. W. H. Trueman said, that a fusible metal that will melt at 350° , may be run up to 370° , before it will blow out. In a smooth glass vessel heat may be raised to a high degree without boiling. The least jar relieves the latent heat and sudden expansion takes place. The same thing may occur in vulcanizers and produce explosions.

Dr. Wert had had his vulcanizers made very thick. He had found that, at 320° , the application of a wet finger to the vulcanizer produced a hissing sound. He therefore uses this as an additional test.

Dr. Buckingham suggested that a disc of copper, properly arranged, should be attached to our vulcanizers. These discs could be tested to known strengths, and would indicate the amount of force.--*Dental Times*.

SELECTED ARTICLES.

THE INTER-DEPENDENCE OF DISEASES OF THE TEETH AND OF THE FEMALE PELVIC ORGANS.

BY N. W. HAWES, BOSTON, DEMONSTRATOR OF OPERATIVE DENTISTRY
IN HARVARD UNIVERSITY.

The reflex influence produced by diseased teeth opens a subject so

patent to the Medical and Dental professions, that I feel my inability to inspire new thought upon the universally accepted fact, that disease in an organ may and does excite sympathy in contiguous or remote parts of the physical apparatus. Though the teeth are classed among the "superfluous organs," yet in their disease it has been shown that they exert a vital influence upon the whole living system. Among the affections enumerated by Dr. Fitch, in one of his dental works, as occasioned by diseased teeth, are phthisis pulmonalis, dyspepsia, inflammation of the eyes, epilepsy, hysteria, hypochondriasis, rheumatic affections, tic doloreux, etc. ; and he asks, in speaking of alarming diseases as being produced by slight causes, "Is it unfair, or unreasonable, to suppose that a diseased state of the teeth, or their being in a state of putrefaction and constant irritation and inflammation, should at times produce the most fatal diseases in the general system?"

Now, it is not necessary that they should be in a state of putrefaction to engender diseased influence. I at one time called upon a medical friend suffering from neuralgia, as he said, and remarking that he "was sorely afflicted at times," and had exhausted the whole list of anodynes, and found but temporary relief. I questioned him in regard to his teeth, eliciting the reply, that they were "sound as a nut, every one of them." On my persisting, he suffered me to make an examination, which resulted in the discovery of a left superior bicuspid root entirely covered by a healthy-appearing gum. This root was not purulent, or even unhealthy to the eye, but its removal put an end to his neuralgic sufferings, and fully converted him to belief in reflex influences of the teeth. Neither is it necessary that the teeth should be painful, to create disease. Is it uncommon for painless tumours to occasion death ; or for foreign and effete matter to produce the same result, even when entirely unsuspected as the cause, until this is developed by autopsy ? I could relate several cases where marked and immediate improvement in health has followed the removal of diseased teeth, whose influence has not been suspected. I will cite but one instance. About seven years ago, a lady called upon me for advice respecting her teeth. She had suffered long from dyspepsia, had a hacking cough and hectic fever, was exceedingly nervous, and of course somewhat emaciated. There was not a sound tooth to be found ; her gums were inflamed and putrid, with pus exuding from around nearly all her teeth. I at once advised their removal, and the adjustment of an artificial set, She ques-

tioned the propriety of going to the expense, inasmuch as her health was so precarious that she did not expect to live long. I dwelt upon the probability of an improvement in the general health after release from her teeth, and finally persuaded her to submit to the operation. The next day she came in and allowed me to extract her teeth,—twenty-eight in all—without anaesthesia, and thus remove the cause of all her infirmities, as was subsequently demonstrated by her speedy return to health. I saw her a few days ago, and she said she had “not been sick a day since I took her teeth away.”

Who can doubt the pernicious and even fatal effect of the masses of disease that exist in some mouths, when we consider their contaminating influence over twenty thousand inspirations every twenty-four hours, of heaven's purifier to life itself, the blood, or the numerous nervous disorders that arise from the teeth, too often the primary cause? Is it not startling that the medical profession pay so little attention to the teeth, when they consider that the dental nerves are derived from those usually denominated the superior and inferior maxillary, which are the second and third branches of the fifth pair? Do we not at once perceive the intimate connection between the teeth and the whole body? But I will not extend these remarks. It seems but necessary to call attention to the fact, and it will of itself excite prolific thought.

In reversing the problem, with a few cursory inferences from gynaecology, with regard to the reflex influence produced upon the teeth by an unhealthy uterus, I call to mind the expression of some writer, that every child costs its mother a tooth. Now, whether this trite saying be true or not, I know a mother whose teeth were pronounced past saving by a dentist over twenty years ago; she ceased child-bearing, passed the turn of life, and subsequently I filled her teeth, with the firm conviction that my labor was not lost. My impression is that the uterus plays a more important part in the defecation of the female teeth than is generally conceded. Dr. Hall says, “There is scarcely a solid texture or fluid that is not altered from its healthy condition by amenorrhœa.” Now, anything that would deplete the blood, or give rise to an unhealthy and vitiated secretion of the fluids of the mouth, must exert a deleterious effect upon the teeth, either by producing inflammation of the gums, or by making direct aggression upon the teeth themselves; and, as the female teeth suffer most, we must hold the uterus responsible for part, at least, of these influences upon them.

After operating, some time since, for a lady, I flattered her with the remark that her teeth were much better than the average. A few months afterwards she called upon me, looking rather anæmic. An examination revealed a sad condition of her teeth,—her gums were swollen, turgid, and bleeding at the slightest touch, and her teeth badly decayed, particularly at the margin of the gums. I confessed my inability to understand the condition, but inquiry from her husband revealed the fact of a miscarriage, and to this I attributed the erosion of her teeth. Was not my inference correct? Erosion of the teeth is obviously the result of the corrosive menstua that come into contact with them,—the acid principle being the active agent generally, if not always. I knew a lady, who died from cancer of the uterus, whose teeth during the last few weeks of her life were literally washed away. Now, what caused this abundant secretion of acid, if not the diseased uterus? Would there have been the same secretion had the disease been elsewhere situated? Is not the uterus, when diseased, prone to produce a condition of things favorable for the destruction of the teeth? And is not the uterus in a condition to exert a depraved influence upon the fluids during nearly two months in the year, conforming to the menstrual periods? Does not the offspring of a mother, suffering from any of the innumerable diseases of the pelvic organs, inherit an imperfect general organization, to hand down even to the third and fourth generation? I suppose that a child properly brought into existence, and endowed with an unimpaired vital fluid, might live on like Methuselah, and perhaps forget to die, unless by accident, or another flood. Some one has said that the original impartation of life is from the father, but the development depends upon the mother; and if she be healthy and robust, the child will be so, too, almost regardless of the father's physique. Certainly we know that the child inherits a good or bad set of teeth from the maternal, rather than the paternal parent, and that the teeth are much affected, even where a wet nurse is employed, in conformity with the condition of her teeth. To end this digression, I am one of those who do not consider that the organs of reproduction were ever designed for a source of amusement merely, but for the specific object of replenishing the earth; and I sincerely believe that their abuse is the primary cause of a great part of the disease, contracted or inherited, to which flesh is heir. Would that some competent hand would properly treat this subject for the good of a common humanity! It might disgust a Paul, or shock a Joseph;

but let the one exempt from the sins referred to, cast the first stone.
—*Gynaecological Journal*.

DENTAL ASSOCIATIONS.

BY CHAS. E. FRANCIS, D.D.S., NEW YORK.

Within the last decade of years numerous dental societies have sprung into existence with an almost magical bound. They exist in nearly every State and city of any importance in the Union. They have appeared beyond our territorial borders on this continent; and away across the broad Atlantic they are multiplying in numbers, as the large cities of Europe can testify. Prior to 1859 there were very few dental societies in the United States; perhaps none outside, or but one or two at most; now their name is "legion."

The American Dental Association was organized at the period just stated, and its influence has pervaded every part of our land; indeed, its sphere of usefulness has no limit within the bounds of civilization. It is needless to state that dental associations have been productive of great good to the profession. They have been of *incalculable* benefit, not to the profession only, but to the world at large. This everybody *ought* to know, but surprising as it may seem, there are some people so stupid or stubborn that they are unwilling to admit this fact. None are so blind as they who will *not* see, and this characteristic too often crops out in the human family.

Through the teachings of societies, dentistry has advanced wonderfully within a brief period of time. Through their influence, colleges have been established and maintained. They have infused a new spirit into members of our profession, urging them to strive for higher attainments and for greater usefulness. In concert assembled, members of the various associations discuss all matters relating to their practice, and compare the results of individual experience. They are the *nuclei* of professional and social intercourse. There suggestions are presented, theories propounded, speculations debated, and opinions advanced on the mutual aid plan, where each gives freely of the fruits of a labored experience, that all may partake largely from the rich and bountiful repast.

No one, of course, supposes that every member of an organized association is an active worker, for dentists are not different from

the rest of mankind in this respect. There are always two classes of members, the *active* and *passive*, or "workers" and "drones."

There is a difference even in the latter class, for some are more willing than able to do, while others are unwilling to work whether able or not. It is well for both classes to come into our associations, for they derive benefit at no extra cost on the part of others. They assist in contributing to the financial support of societies, and are sometimes converted into useful workers.

Useful as associations have been, few, if any, have done all they might have done for the benefit of their members or for the communities wherein they exist. Few of their members have severely taxed their energies to support and keep them in working order. Some have labored with a degree of assiduity, but even they might have done more. There is a broad field of usefulness still in the foreground. If the members of each society would work together with a will—labor patiently and harmoniously with a truly fraternal spirit—the influence they could command and the usefulness that might accrue from their united efforts could hardly be estimated or conceived.

In society gatherings, all petty bickerings and professional jealousies should be put aside. Offensive personalities should never be indulged in. Higher aims and better motives should govern each head and heart. To give and to receive instruction, with generous hearts and appreciative minds, is the grand foundation for a successful dental society. In union there is strength and a great degree of safety. A "profession" of isolated beings is imbecile, is insignificant. It has no position, it commands no respect. It can claim no rights, or possesses no power to maintain them. It plods its way through darkness with a scarcely perceptible progress. But gather together the isolated units, and what a force is secured! A snowflake is a tiny atom so delicate as to melt at the touch of one's finger, yet an aggregation of these minute feathery atoms has formed a barrier that defied the mighty efforts of the powerful steam-engine while dashing along its track of iron with a seemingly irresistible fury! So, well organized societies are the bulwarks of strength to a profession, as well as ever-flowing sources of instruction and profit. They should, therefore, be supported and encouraged by all good dentists.

If properly conducted, society meetings may be exceedingly interesting and attractive; but to be such they need some definite and decided system of action. For the want of this many societies, that

were organized with a great display of enthusiasm, have gradually lost their element of zeal, and some have apparently faded into oblivion. Now, why is this? Let us consider,—in the first place, that too much time is uselessly spent in our professional gatherings. Various matters, of little or no importance, are too often introduced and discussed until the best part of a session is hopelessly lost. Indeed, I have attended meetings where entire evenings were consumed with confused arguments that to a majority of hearers were not of the slightest interest whatever, and much to the disappointment of many who had anticipated a more profitable time in listening to, or participating in, discussions on subjects previously announced, but not even introduced on these occasions. They who leave their cheerful family circles, and go oftentimes a great distance, to attend society meetings, are not willing to spend their coveted time in listening to futile bickerings. This has undoubtedly been a serious cause for the decline of many associations. The trouble should be obviated, and may be done by having an executive committee to whom might be referred all matters of a business character, and receive their sanction before being introduced at any regular meeting. This committee should act as chief engineers, and see that the machinery of the society is kept in the best possible order. Societies are often ruined by opening their doors too wide. A thimbleful of ink will injure a gallon of wine; so one or two evil spirits in a society may render themselves so odious as to drive all good men out.

Meetings often lack life. Much like an assembly of "Friends" do members sit and wait for the spirit to move them. At every meeting there should be one or more essays upon each subject for consideration. These at once enliven the occasion and call out latent ideas for ready expression.

By economizing time, part of each session might be devoted to giving clinics, relating incidents of office practice, making inquiries, asking counsel, exhibiting specimens of interest to dentists, etc.

To get an extra amount of work from members, it is well to divide up a society into committees. Let a suitable number of well-chosen members be put on each, and have them report at stated periods whatever is interesting in their several departments. Committees are often remiss, negligent, or dilatory; but if the presiding officer is true to his duty, he will not hesitate to remind them of their shortcomings.

Members are sometimes at a loss to find questions for their discus-

sions, and much time is lost in consequence. By appointing a special committee to select subjects for each session this difficulty may be remedied.

Various other suggestions might be given for furthering the interest of societies, but only one more will be noticed here. It is to appoint corresponding members from different parts of the country, and urge them to occasionally send communications on professional or local matters. One or two of these read at each meeting might be interesting and profitable, besides cultivating friendly relations in other localities.

To sum up, let every worthy dentist be a member of some organized association, and be willing to contribute something to keep up its interest. He should be willing to make a little sacrifice where so much is to be gained for himself and his profession.—*Dental Cosmos*.

DEVELOPMENT OF CELLS OF THE DENTINAL PULP INTO TUBULI.

BY THOS. C. STELLWAGEN, M.D., D.D.S., PROFESSOR OF HISTOLOGY AND
OPERATIVE DENTISTRY IN PHILADELPHIA DENTAL COLLEGE.

In a recent work* there occurs the following paragraph:

“Why this secretion, in its organization, should assume the position of the elongated tubular cells which pertain to the structure of dentine, I have, of course, no idea; and it is quite enough for our purpose to say that it is a law of life perhaps never to be comprehended this side of eternity, and the discovery of which would, at any rate, have but little practical signification to us.”

With the author I must agree that the *cause* of the phenomenon of some cells forming tubes, while others of similar appearance are developed into intertubular structure, in our present state of information, must be attributed to the imperfectly comprehended vital force, emanating from, guided and presided over by the Creator himself.

The *effect* of this tubular arrangement within the structure of the dentine is a matter which not only seems to be deeply interesting to those who study dentistry as an art, but to that other class who are devoted to it as a science.

Two reasons have long been given for this tubular condition, that seem to be well received, namely: the transmission of nutrient fluid,

* A Treatise on the Diseases and Surgery of the Mouth, Jaws, and Associate Parts. By Jas. E. Garretson, M.D., D.D.S. Philadelphia; J. B. Lippincott & Co., 1869.

or the lodgment of nerve filaments, or both. These we see in the works of all writers upon the subject; but an equally if not more important reason than either has been touched upon, which, although it has existed quite as long and is no less plain than these, seems to be neglected, and remains almost unconsidered.†

The opponents of the doctrine of nerve filaments claim that hydrostatic pressure upon the pulp from the fluid in the tubuli, the waves sent along these channels, and the transmission of vibratile motions by the solid substance, would all account for the peculiar sensations of dentine, thus apparently rendering these filaments unnecessary. By Prof. McQuillen it is urged that if the pulp had such an infinite number of connections with the tubuli, it would be held firmly in position, and could no more be drawn out of its cavity than Gulliver could stand up when first he found himself bound by the Liliputians.‡

To these arguments I think might be added the effect of osmosis on the pulp through the tooth, and reflex action through the nerve; the former, as shown by the two currents between fluids of different densities through organized material, and the latter, by the familiar effects of sapid substances, as vinegar, &c., upon the salivary glands.

On the other hand, the advocates of this doctrine claim that they have found fibres occupying these canals, which would be very conclusive if their opponents did not have the theory of coagulated fibrine to fall back upon. Some say that there are no changes in dentine once formed, but this is untenable; every midwife knows that a pregnant or nursing woman frequently finds her teeth suffering from softening of the tissues. Finally, others claim that there is not abrasion, or wear of dentine, and that it needs no nourishment. From a review of the above one might almost be persuaded that there is some chance that the dentinal tubuli are of very limited use and could be dispensed with altogether. Nature, however, has good and weighty reasons for forming this tissue after so uniform a pattern, and, if we search, no doubt others yet unthought of will some day be understood by all.

The architect has long since learned the lesson, which the economy of nature has taught by the hollow tubes of the long bones, woody

† "A Course of Lectures on Dental Physiology and Surgery." By John Tomes, Surgeon Dentist to the Middlesex Hospital, &c. London. 1848.

‡ See DENTAL COSMOS for October, 1869, page 524.

fibres, etc., that this is the type form for the greatest strength with the smallest amount of material and weight.

The teeth are models of strength, beauty, and perfect adaptation of means to ends; it is no wonder, then, that nature should have brought into play her favorite style of development, destined as they are to sustain heavy pressure and severe shocks, while at the same time durability and lightness are so essential to their successful employment for the welfare and comfort of the individual.

The central cavity of the tooth, as we all know, is filled by a pulposus mass, which greatly reduces the weight, and from the tubular shape, but slightly affects the power of resistance offered by the organ; radiating and branching in all directions from this are the dentinal tubuli, whose curvatures would seem to admit of their acting as tough and springy supports of the whole tooth, like the tubes of a boiler, or supporting the enamel as the hollow columns of a building do the roof; the whole, bound together into a solid by the intertubular tissue, being an illustration of the axiom—"In union there is strength."

These tubes are more numerous and closely packed, as well as curved, in the permanent than the deciduous teeth, and in both in the portion of dentine under the masticating surface, and such points as receive the impact of the shocks and lie in line of the greatest pressure. Thus it would seem to be arranged with the view of being most tenacious and least liable to transmit painful jarrings to the nerves from these points.

Like the military engineer, who covers his fort with fascines, bales of cotton, hay, etc., to protect the soldiers in the bomb-proof, so nature would seem to guard her tissues of the tooth pulp. The whole is coated by a plating of the most resisting material which is in the store-house of the animal economy, the capped or conical formation of which seems to be calculated to condense o. bind together the structure below in proportion as it is pressed upon, as the hoops do the staves of a barrel.—*Dental Cosmos*.

EDITORIAL.

DENTAL FEES IN CANADA.

If we compare the fees for professional services of our brethern in the United States and England, with those generally received in

Canada, we find a striking difference, greatly to our disadvantage. In Canada we find editors of influential newspapers, and intelligent men in every sphere, with less appreciation of the importance of the dental profession, than thousands of poor servant girls in the neighbouring country; and we also find a large proportion of our otherwise best informed men, much less competent to distinguish between honesty and quackery than the same class of persons across the lines. This may in part be attributed to a less frequent acquaintance professionally with the dentist, for teeth in Canada are very much better than in the United States, and there is more dentists in the city of New York, and more call for them, than in our whole Dominion. This ignorance may be traced to several causes, of which we do not purpose to speak just now; but in some measure it may be owing to the fact that Canadians have seldom had the importance of dentistry, and its just claims, properly presented to them. In the large cities there are men calling themselves dentists, who have no respect whatever for the profession; who treat it as a mere trade, though they have no hesitation about assuming the title of "Doctor"; who work very badly for very low fees, and whose existence is a constant curse to the respectability and elevation of the profession. While the respectable practitioner avoids all bombast and little, if any, advertising, these quacks rival Barnum in their humbug and advertising, and to a large mass of the people, are accepted as representing the status and worth of the profession. The mistake many honest practitioners make, is in reducing their customary fees, because a few raiding quacks advertise dental operations for next to nothing. When we teach our patients that there is no parallel between dentistry and carpentering, while there is between dentistry and medicine; that we are professional men, not only mechanics; that one cannot become a dentist by inspiration; and that there is just the same difference between the work of the best dentists and the worst, that there is between a painting by Kreighoff and the efforts of an untaught tyro; that we charge for mental as well as for any manual labor we execute, and that we do put a great deal of present mental labor, and past study and experiment into our work, then we educate our patients to understand that there is a difference between a dentist who has properly studied his profession, and one who has not; and that we have a reasonable right to charge our fees, and that we give for them a fair return. We would challenge any one either in Canada or the United States to produce a single dentist working for

low fees, who has been properly educated, either at college or by private preceptors, and who does the very best in his power for his patients. We find no fault with men who commenced the practice of dentistry at a time when there was no legislation and no association, and who, perhaps, now do honor to the profession. Let by-gones be by-gones ; but let the whole profession *now* unite cordially to raise the standard of study and practice, and to demand from the public a just recognition of our claims. With respect to fees, they will find opposition at first to any increase of price, but if they have the ability to do superior work, and can show the patients the difference between it and inferior work, there will be sufficient appreciation in the majority of cases to pay a reasonable price.

In almost every city office reputed for remarkably low charges, and extensive bombast, one may see at any time from ten to twenty persons waiting their turn to have their teeth treated ; and the "perfect experts," as the operators like to advertise themselves, think nothing of filling from one to three cavities for each of the ten or twenty in a single afternoon ! Now, if we educate the public in those principles of dentistry which will enable them to know the bad from the good, the honest from the dishonest, in the course of time there will be less discouragement to faithful workmanship, and we will receive a better equivalent for our labor. In almost every case, we will find a low rate of charges to be associated with inferior talent and inferior work. We would like to know a single dentist of any repute among his confreres—who, after all, are the best judges—who inserts artificial sets for ten and fifteen dollars, and fills with gold for fifty cents.

To sum up, dentistry in Canada is very inadequately remunerated ; that is, where one endeavours to use for his patients the very best talents and skill he possesses, which has been cultivated and trained by years of steady studentship and faithful practice. If the Canadian public desire a responsible, educated and properly qualified class of men to take charge of their teeth, it must appreciate skilful work, and pay remunerative prices. If, on the other hand, it desires the dental profession to be principally composed of quacks, and their services to be incompetently rendered, they have only to continue patronizing the "cheap dentists." Cheap dentistry is a poor speculation, because no dentist worthy of the name, can afford to work for either love or fame alone. Not to mince the matter, he must have fair prices for honest work.

W. G. B.

ERRATUM.—In the 21st line from the bottom of page 164, of our last issue, an error crept in, which we wish to correct. We made the writer of the article say “dental irritation.” It should read “dentinal irritation.”

CORRECTION.—On page 206 of this number, appears the following: “Mr. G. L. Elliott moved, seconded by Mr. Howe, that the report be not received, and that the meeting adjourn *sine die*.’ Withdrawn.” The Secretary, Mr. Howe, writes us that that part of the report, as copied from the *Globe*, is not correct, but that the intention of the resolution was to defer the report of the Committee till a future meeting, in order that the matter might be more fully discussed.

In our next we will give a full report of the proceedings of the Quebec Association, and also a report of the Eighth District Dental Society of New York.

We find the following in the *Trenton Courier*:

“On the 12th inst., Mr. J. R. Irish complained of Mr. C. H. Dorland, before Messrs. Austin and Gordon for practising Dentistry without license, Mr. Dorland was fined one dollar and costs, to be paid in ten days.

The following circumstance occurred in the practice of Dr. W. H. Elliot, so long and so favourably known in Montreal.

One day, the Doctor says, one of his countrymen, a regular Vermonter, came to him with his head rolled up in flannel, and one side of his face swelled out of all shape. The cause of his trouble was evident enough; he had a tooth with a hole in it, and was suffering with a dreadful tooth-ache. The dentist put him in his chair, and, getting hold of the tusk, had it out in a moment. The patient got up, washed his mouth, looked at the Dr., and looked at the tooth so lately his, but was evidently puzzled about something. At last he said:

“Say! stranger, is that the way you allers do?”

“Of course it is; how else could I do?”

“Wall, I thort as how you put a blast in, and blowed them out?”

“Blowed them out! You are a green varmint! How the plague could I blow a tooth out?”

“Wall, I dunnow; but if you don’t put a blast in, what do you keep tooth powder for?”