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DOMINION DENTAL JOURNAL.

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No. 11.

Original Communications.

Little Aids in Practice.

(From St. Thomas, Ont.)

AT THE CHAIR.

Perhaps one of the safest methods of annealing sheet gold is upon a piece of mica, when the flame cannot possibly touch the gold. This method works admirably with most makes, but I find that some varieties of soft gold seem to require additional heat, and this too, by direct contact with the flame, after it has been made up ready for use.

To carry very soft mixed cement to the bottom of a cavity, remove it from the spatula on to a wee bit of paper laying at the edge of the glass slide; then, with tweezers, carry this edge-wise up between the two teeth, if an approximal cavity, and press home with an excavator.

Miniature napkins cut or torn from pure white old cotton are preferable to those from new material, and should always be thrown away when once used. I trust none of us have the heart of a certain western operator, who compelled his better-half to wash and iron an innumerable number of these requisites. One of these folded up and laid between the lip and gum, or under the tongue, wonderfully extends our time in brief operations, and makes it quite possible to perform dry work. When removing debris from a cavity, one of these little squares held in the left hand, ready to take the refuse from about the excavator is but another item of carefulness and consideration on the part of the dentist that elevates him in the estimation of the patient; in fact, the need for these grows so rapidly that we soon find ourselves well supplied with

them. Not infrequently persons drop in to have one or more of the incisors ground down to match the rest; to expedite the work hold a wet sponge against the wheel, and then you can work right along without interruption.

An especially convenient chisel is one rather broad, and the end-cutting edge ground out fish-tailed. The two sides may also be brought to a levelled, sharp edge. Try it.

Shave down silver nitrate and dust this over a freshly exposed pulp, when the patient is enduring great pain and will not tolerate the usual application at once.

When applying the cord, and it persists in slipping back into the cavity, make the knot secure, then carefully push up both it and the dam to position, when it will usually remain.

I have much faith in, and therefore disinfect every cavity immediately before filling.

Keep an oiled wool cloth to finish cleaning instruments, and they will always remain bright.

For use under anæsthetics, one pair of universal forceps should be a part of every set; in fact, these are never to be despised, if well made, and with curving beaks so to pass well over all crowns and bring the pressure well up on neck of the tooth. I am especially successful with those weak and broken down lower molars, frequently so trying, by taking hold well down or cutting through on to the anterior root, which is the curving one if at all so.

AT THE BENCH.

With certain varieties of flat mouths, score the model close up and around the air chamber, also several more across those soft portions of the palate, usually found on either side of the median line and back from the chamber. When smoothly done, these raises on the palate surface of plate do not seem to irritate the mucous membrane.

Occasionally a sharp, deep groove extends back along the same median line; use soft palate rubber over this.

Hints.

By W. A. BROWNLEE, M.D.S.

If the rubber dam is punctured during the process of filling, dry it thoroughly and touch the spot with a thick solution of chloro-percha, such as is used for nerve canals, and allow the chloroform to evaporate before proceeding with the work. This will effectually exclude the moisture.

If you are troubled with the top plate of the flask coming off while packing, drill two holes near the rear end of the plate about

half an inch apart, make a loop of heavy brass wire, insert in these holes from the inside and rivet in place. If the loop projects half an inch into the plaster it will not interfere with the denture, and will save you considerable annoyance.

Instead of soldering small strips of gold to clasps to retain them in position on rubber plates, use two platinum pins from a broken porcelain tooth. The clasp is held firmly to the plate, and the plate is not so liable to crack as if the strips are used.

A convenient rubber heater is made by taking a piece of asbestos an eighth of an inch thick and eight inches square; put a tin rim on it to strengthen it, dip it in water, wipe the surface, lay the rubber, ready cut, upon it, and place over the vulcanizing lamp for a minute or two before packing.

Dark joints, in repairing a denture made with gum sections, are produced by the charring or burning of particles of food, etc., with which the joints have become filled. This cannot be prevented unless the sections are removed from the plate and the adjacent ends dressed on the wheel.

When filling a number of cavities with gold at the same sitting, put on the rubber dam before you begin to prepare the cavities; remove the rough decay from all, then complete the preparation of the one you suppose will give the least pain, and fill it. By the time you have it completed the other cavities will be so thoroughly dried out that they can be excavated almost without pain. Try it.

Time as a Basis for Charging.

By W. R. WILKINSON, D.D.S., L.D.S., Elmira, Ont.

"How much do you charge to fill a tooth?" is perhaps a question which your readers have heard before, and one which indicates to the operator that the questioner has a pre-conceived idea firmly fixed in his mind, that every dentist has an unalterable tariff of charges, and that every operation has a definite amount as payment for its performance.

I had a case not a year since where a lady who had previously never had any other work done than simple plugging of cavities, grew righteously indignant, when her account showed her that for treating and filling one tooth alone, I had charged three or four times as much as for any of the other single fillings she had hitherto had inserted. Had this patient reflected that the work in question had occupied, if the time at different sittings were summed up, about three hours, she would likely have had a little compassion

on a young operator, and would not have been so swift to withdraw her patronage as she did.

On a line with this lady's action, is that where a patient expects no charge will be made for failing to extract a root, perhaps even with the process which, it may be, an M.D. has decapitated ten minutes since, or, a frail shelled molar in a mouth which has known no other dental instrument than steel forceps. Notwithstanding the fact that the operator may work just as conscientiously on such work as upon any other, and may spend half an hour, as does happen occasionally, I presume, with some others of the profession as well as myself, there seems to be an understanding more or less widespread among the laity, that dentists charge only for extracting when they succeed in removing the offending organ.

Another patient, whose following is legion, agreed to have me remove an aching pulp and afterwards fill it and the cavity. After due medicament I began the work, and did all I could at first sitting, according to my usual practice in such cases, and dismissed the patient with instructions to call again in three days. Though a faithful promise was made, the next call was indefinitely postponed, and when the account was presented he said the tooth had not pained any since; and as I had not extracted or filled it, he thought I should have no compensation. Sometimes we are asked to examine a mouth, and make an estimate of charges for doing what we think should be done, and if we comply, we very often find afterwards that on our first examination there was an exposed pulp we did not notice; also, may be a distal cavity in a molar we could not see and did not probe sufficiently well to find. In these cases, though we may make only an approximate estimate of charges, we are bound by some inward feeling not to exceed it, and consequently in nine out of ten such cases we lose money by losing time.

These and many other cases in practice have caused me to wonder, if *time spent on work* should not be considered the chief basis in making charges. I cannot see my way to believe, that no other considerations should be reckoned with, as all operators do not work equally rapid, nor does the same operator work as rapidly in his first as in his fifth year of practice. Besides this, material is not of uniform price.

I do not deny that charging *by the piece* is with the majority a satisfactory system, but it does seem to me that no one should set up as his ideal of perfection to be able to insert so many sheets of foil in a day or so many amalgam fillings, or to perform any other *measure of quantity* of work; but rather to be able to say at night, "I have worked conscientiously, and have done my best with the work I have had in hand to-day."

The tendency of the fixed system of charges, seems to point to the former ideal rather than to the latter, and it seems to me that

if *the time spent* were more generally considered the basis for computing our charges, more general satisfaction would result, better work would be performed, and a higher standard among the professions to-day would be accorded to ours, than which none performs what it undertakes more successfully.

Correspondence.

To the Editor of the DOMINION DENTAL JOURNAL :

SIR,—Are we drifting, or are we keeping well to some wisely selected course? To observe the manner in which Dentistry is regulated (?) in this Province, would lead one to infer the ruling ambition, the chief *raison d'être* to be the unlimited increment of the by no means inconsiderable army of dentists already existing in this province. I think it will be granted by anyone who has given the matter even casual consideration, that we have *too many* dentists. Here is my own little town—three dental offices, whilst one dentist could do all the work alone. From an economical point of view this is not as it ought to be. When three men offer their services where there is a demand for the services of but one, what wonder that quackery and unprofessional methods become a crying evil? The condition of things is approximating to that which would obtain were there no Dental Act upon the statute book. "There is a good thing in Dentistry," say the boys to themselves, and like good patriots, at the call to arms, the plough, the counter, the forge are each deserted for the glories and emoluments of war! The efficiency of an army does not necessarily depend upon mere numbers. Give us a band of "picked men" if the campaign is to be rendered short, sharp and decisive. We, the dentists, are moving as though devoid of ordinary intelligence. We are permitting our numbers to be increased at a rate that is out of all proportion to the increase of our population, or that of the portion which avails itself of the advantages of dentistry.

Has there been a pronounced effort on the part of the College to limit the number of fresh graduates? Has all been done that could be done under the Act?

We truly seem to be at sea, without chart or compass. Were there something of organization in the dentistry of Ontario, the dental demands of every hamlet and side-line of the Province would be known. How is it with church and political organizations? They know something of the material they have to work upon, and they accomplish something definite. Such should be the learning expected in candidates, and such the strictness of

the examinations, that Doctor would be no unbecoming or inappropriate title for the successful candidate to bear. As to morality or common manliness, all else is vain without these. Should a high degree of proficiency as a chief requisite be insufficient to limit the number of persons entering the profession, then some other means should be adopted. That there is an undue rush into the professions, is patent to all except those who are "rushing." Many of these men, if they knew what was before them, would remain outside of the professions. Persons before entering a profession should have some approximate notion of what lies before them. Colleges should discourage applicants rather than encourage them, thus becoming instrumental in averting much sorrow and disappointment. The great mass of the dentists of Ontario have not interested themselves in those matters which pertain to the general welfare of the profession and the public at large. Apathy is the handmaid of misgovernment and disaster. I for one must confess *peccavi* to the above charge. Now I am ready to despair. The conviction to me is irresistible, that we are on the wrong track. We haste to perpetuate the very evils existing in scores of other occupations. We build with one hand while we destroy with the other. There is a manifest want of organization. Every man does what to himself seemeth good. There is nothing to be gained by turning one's eyes from the evil, performing what has been called the "ostrich act." The issue must be looked squarely in the face, and a remedy must be found. I should like to see a general conference of the dentists of Ontario met, at some central point, and steps taken whereby the "true inwardness" of the whole dental situation in the Province might be made manifest.

Yours very truly,

Ridgetown, October 13, 1894.

A. S. VOGLER, L.D.S.

Proceedings of Dental Societies.

Royal College of Dental Surgeons of Ontario.

The twentieth session of the School of Dentistry of the Royal College of Dental Surgeons of Ontario, Toronto, Ontario, was opened on October 2, in the presence of all the members of the Faculty and about one hundred registered students. The opening lecture was delivered by Prof. Primrose, who has joined the Faculty since the close of the last session, taking the place of Prof. Peters, who resigned. Prof. Primrose is an honor graduate in medicine from the University of Edinburgh. For several years he has been at the head of the Anatomical Department of the Faculty of Medicine in Toronto University. In the Dental College he takes the

chair of Physiology. In his opening lecture he referred briefly to the history of dentistry in ancient times, its more modern developments, and its association and connection with general medicine. He also enlarged somewhat on the importance of the study of comparative Dental Anatomy, pointing out the desirability of the dental student and the dentist being familiar with the dentition of the lower animals, and especially of the vertebrata. The lecture, which was well received by the class, evidenced considerable research on the part of the learned Professor, whose attention has not previously been directed to dental subjects. The class when complete will consist of 50 freshmen, 40 juniors and 45 seniors.

The financial depression and consequent scarcity of money does not seem to have deterred the young men of Ontario from directing their attention to the study of Dentistry. These numbers would seem to be out of proportion to the demand for dental practitioners in the Province. The final outcome of the inevitable competition will be but another illustration of the doctrine of the "survival of the fittest."

The Dental College of the Province of Quebec.

The regular lectures of the Dental College of the Province of Quebec began on October 17th.

The following compose the teaching staff: Medical Course, McGill—Anatomy, Prof. Shepherd; physiology, Prof. Wesley Mills; chemistry, Prof. Girdwood; materia medica, Prof. Blackader; histology, Prof. Wilkins; general pathology, Prof. Adami. Laval—Anatomy, Prof. Mignault; physiology, Prof. Duval; chemistry, Prof. Fafard; materia medica, Prof. Desrosiers; histology, Prof. Duval; general pathology, Prof. Brennan.

Dental Course—Dental pathology and therapeutics—W. Geo. Beers, L.D.S., L. J. B. Leblanc, L.D.S.; prosthetic dentistry and metallurgy, N. Fiske, L.D.S., S. Globensky, L.D.S.; dental surgery, F. A. Stevenson, D.M.D., L.D.S.; L. Franchere, L.D.S.; operative dentistry, G. W. Lovejoy, M.D., L.D.S.; J. H. Bourdon, L.D.S.; dental jurisprudence, A. Globensky, Esq., Attorney of the Board of Examiners; Crown and Bridge Work, A. McDiarmid, L.D.S.; J. Fortin, L.D.S.; operative technique, J. G. Gardner, L.D.S., Gustave Lemieux, L.D.S.

Clinical Instructors (two or more for each week day)—J. C. Nichols, L.D.S.; R. A. Alloway, D.D.S., L.D.S.; E. B. Ibbotson, L.D.S.; W. G. Throsby, L.D.S.; J. G. A. Gendreau, L.D.S.; L. P. Bernier, L.D.S.; J. S. Ibbotson, L.D.S.; T. Fitzpatrick, L.D.S.; W. S. Nichols, L.D.S.; G. Maillet, L.D.S.; A. H. Beers, M.D., D.D.S., L.D.S.; R. Watson, L.D.S. (Montreal); E. Casgrain,

D.D.S., L.D.S.; T. A. Venner, L.D.S.; H. Ievers, L.D.S.; J. Paradis, L.D.S.; J. Dorval, L.D.S.; N. Lemieux, L.D.S. (Quebec); J. Lauder, D.D.S., L.D.S. (Cowansville); C. H. Wells, L.D.S. (Huntingdon); A. W. Hyndman, L.D.S.; G. W. Hyndman, D.D.S., L.D.S.; S. J. Bloomfield, L.D.S. (Sherbrooke); J. Porter, L.D.S. (Danville); J. Cleavland, D.D.S., L.D.S. (Richmond); C. H. Moulton, L.D.S. (Stanstead); J. Brassard, L.D.S. (St. John's); J. Pichette, L.D.S. (Three Rivers).

Honorary—Chas. Brewster, L.D.S.; C. F. F. Trestler, M.D., L.D.S.; J. A. Bazin, L.D.S.; H. D. Ross, D.D.S., L.D.S.; S. J. Andres, L.D.S.

The opening lecture was very largely attended, and was delivered by Dr. Beers. The following is a synopsis :

The opening of the second session of the Dental College established by the Legislature, by the unanimous vote and voice of the profession in Quebec, marks an epoch of more than immediate interest. Our sister province, Ontario, led us in the matter of legislation by one year ; but one of the earliest movements made in the English-speaking world in that direction, was a little over half a century ago in this city, when the late Dr. Bernard, the first president of our association, endeavored to get a clause regulating dentistry inserted in a medical bill then before the Legislature, almost simultaneously with the passage of the first dental law—that of Alabama. Three years previously the *American Journal of Dental Science*, the first journal of the kind in the world, had been issued in New York, and a little army of earnest men, led by Harris, opened the first dental college, that of Baltimore. Naturally enough they made some trifling mistakes, and displayed their humanity in some error ; and at once they were assailed as the foes rather than the friends of dentistry. It was a grim gratification to the iconoclasts, when they discovered weak points in the armor of the fathers of our profession. It was a wise saying of Disraeli that "the defects of great men are the consolation of the dunces"; and it is suggestive to remember, that while the names of Harris, Parmly, Baker, Brown, Hayden and others live in history, and will be ever green in our memories, every name of the obstructionists has been forgotten. The fragrance and the fruit of honest work can never die. The mischief done may have a temporary survival ; but the motives as well as the memories of the factious obstructionist will surely perish. The influence of what may be called the reform movement soon extended to Canada, and indeed to England ; for in 1841 Mr. George Waite, an eminent dentist of London, issued a pamphlet advocating the recognition of dentistry by Parliament and the medical profession, "as a legitimate branch of the science, and that no person be permitted hereafter to practise without having undergone examination by one or more censors of the Royal College of Dental Surgeons." Mr. Waite suggested not

only a thorough training in the fundamental branches of medicine and surgery, but a preliminary requirement of mathematics and mechanical philosophy; and that three courses of anatomy, physiology and chemistry, together with hospital practice, should be made compulsory. It was not, however, until 1843 that any effort was made to obtain dental legislation in England, when it occurred in precisely the same manner as Dr. Bernard had attempted the previous year. France, Germany and Austria had stolen a march upon the English-speaking world of dentistry, and had several years before demanded certain legal qualifications to practise. Hunter, Fox, Blake, Bell and Kœcker in England; Delabarre, Maury, Desirabode and Jourdain in France, had written valuable works on the teeth and their diseases. When boasting, as we sometimes do, of our professional achievements on this continent, we should not forget the original researches of the fathers and founders over the sea. We should not ignore, too, the fact that, until comparatively recent years, the dental colleges of the United States, with all their splendid practical character, drank almost exclusively at the scientific and theoretical fount of British inspiration; and that to this day there are no text-books to surpass for original research and close reasoning the classics produced by British, French and German writers. I take pleasure in looking backward on these events, because they inspire us to look forward. As our fathers made history for us, we are making it for posterity. It may be a pride you will pardon, that some of us here this evening enjoy the retrospect in our own province of a quarter of a century, when we gathered together the disconnected elements of the profession, organized the first association, and obtained the first act of incorporation. It will be remembered that the effort of Dr. Bernard was fruitless, because, no doubt it was premature.

It is perhaps as foolish to attempt some things too soon as too late. It was reserved for Dr. Chas. Brewster to take the helm at the opportune time. Aided by the generous and sympathetic encouragement of Drs. Bazin, Trestler and the late Dr. Webster, the movement began in earnest, by a successful professional protest to the Committees of Exhibitions, against the bestowal of prizes for mechanical dentistry. In the document Dr. Brewster then (1860) issued to the dentists of Upper and Lower Canada, he revived the proposal for legislation in the interests of the public and the profession, and his chief correspondent in the Upper Province was Dr. B. W. Day, of Kingston, who was thus inspired to start the ball rolling, and who became the father of dental legislation in Ontario seven years afterwards. On September 2, 1868, the first meeting was held in this city to organize the Dental Association of the Province of Quebec, at which the following were present: Messrs. Brewster, Bernard, Bazin, Trestler, Cantwell, Alloway and Beers. On the 17th of the same month another

meeting was held, which met with a heartier response. The following were present: Messrs. Brewster, Bernard, Bazin, Trestler, Leblanc, Webster, Belle, Alloway, Valois, Nichols and Beers, of Montreal; McKee, of Quebec; Lefavre, of St. John's; Dowlin, of Sherbrooke, and Brodeur, of St. Hyacinthe. There were a few men who believed they had encompassed the limits of dental knowledge, and that the best education was to be sought for at the bench of the jeweller, or, at best, in the laboratory. They opposed the Dental Act of Incorporation, as they would, had they lived in the days of Moses, have opposed the passage of the Ten Commandments, as an arbitrary piece of legislation. The proposal made at that remote date, that the student should embrace in his curriculum certain of the medical and surgical branches, was considered as preposterous as a suggestion that he should study Sanscrit. The cry went forth that the only knowledge a dentist needed was practical, that a dentist had no more need of a knowledge of the anatomical and histological structures of the teeth and adjacent tissues, than a barber had of the physiology of the hair in order to cut it, or a butcher of the comparative anatomy of the cow, in order to serve the public with a sirloin or a fillet. This conviction of the exclusive importance of practical knowledge, no doubt, originated the sarcastic expression that the dentist was nothing but a "tooth carpenter;" and yet it seems to animate some otherwise enlightened members of our profession to-day. And, indeed, no inconsiderable portion of the public are not only led by the same opinion, but voluntarily invite all sorts of imposture from advertising humbugs. Even to-day it would seem as if a portion of the public, and not alone in the townships, revel in the prospect of their own deception, and measure men not by their professional or collateral education, but by the loudness of their pretensions. I am sure that no sensible practitioner depreciates practical skill. None of us can succeed without it. It would be a gross incongruity to pretend to ignore the importance of a branch which this college and the Board of Examiners so emphatically enforce. It would be foolish to disparage any branch of the mechanical arts, especially when in this city, by the munificence of Mr. W. C. McDonald, the University of McGill has now in operation the most complete course of instruction on this continent in Applied Science, embracing the finest workshops and museums, as well as perfectly equipped laboratories in mathematical, chemical, physical, electrical, magnetic and testing branches. I look forward to the time when the curriculum of our own college will be privileged to embrace some of these branches in this magnificent institution. The superstition that a man cannot be both theoretical and practical was founded upon ignorance. No better annihilating retort can be made to such an assumption, than the record of the best thinkers

and operators in our own profession, as well as the theoretical and practical courses required for graduation in our dental colleges, and in such an institution as that of the Applied Science of McGill.

At the same time, we must recognize with imperative force, that the dentist whose education does not embrace to-day the fundamental subjects of anatomy, physiology, chemistry, materia medica, histology, part of pathological anatomy, oral surgery and microscopy, is an imperfectly educated man, "a fractionally qualified being." It is not an impossible educational feat to take an average boy out of the gutter, and in a year or two produce a fair and sometimes a first-class mechanical dentist. It is quite probable that a very fair practical operator may be made out of a man who can neither write, read nor spell his mother tongue. Such a man may even rise to a high pinnacle in public opinion, because public opinion asserts its right to judge for itself in matters it does not understand. Technical and manual skill are indispensable; but they are so much more easily attained that students are apt to slight the preliminary branches upon which they are founded. As dentists, we have frequent experience of the ignorance medical men display of the direct and indirect diseases of the teeth. Having abandoned the teeth to the dentist, they are apt to overlook the relations of dental lesions to diseases of other parts. Cases are not infrequent of serious diseases originating directly in diseased teeth; of reflex ocular and aural disorders induced by dental irritation; of neuralgic affections of the most intense character; epilepsy and paralysis caused by carious teeth. The extensive sympathetic connections of the trigeminal nerve easily explain why the neck, face, throat or any of the parts associated that are supplied by the nerve itself, may be the seat of reflex trouble. Dental abscesses have been mistaken for scrofula. If there is one thing more than another which marks the highest dental standard to-day, from what it was a quarter of a century ago, it is not, by any means, the advancement in the mechanical and purely practical, but the closer connection established between the sciences embraced in bacteriology and pathology; the study of the relation of fermentation to caries, and the knowledge that just as the brain is dependent upon the heart and lungs for its supply of arterial blood, as the heart is dependent upon the brain for nervous energy, and upon the lungs to purify its blood; as the action of the lungs cannot be sustained without the influence of the nervous system and the propelling action of the heart, so is the dependence and interdependence of the dental organs upon their immediate neighbors, and frequently upon distant organs. We should therefore enjoy the legitimate pride in the reflection that, while we claim to be a distinct profession, dealing with the most prevalent disease of the

age, we are or should be governed by the same fundamental principles of medicine and surgery as the general practitioner; and that the exclusively practical man, who wilfully ignores or who is content to remain ignorant of these principles, can no more claim rank as a scientific dentist, than the manufacturer of orthopedic appliances can claim rank as a surgeon. Every province of our Dominion is infested with the "local anæsthetic" fiend, whose office is converted into a dental abattoir. Every city and many a town has its professional charlatan, and it is only by the influence which will emanate from our educated and ethical members that the public will learn to detect deception, even if true "science be dragged at the heels of sensation."

Referring to the College Dr. Beers said: When by the unanimous vote and voice of the dentists of this province, at the largest meeting ever held, the desire was repeated for the third time in their history, and finally put into a resolution to seek for affiliation with one French and one English University—Laval and McGill—it was done in no selfish or offensive spirit. It was simply a matter of business; a conviction that concentration was desirable in the interests of the students; that it was not as desirable to enter into the wholesale and retail manufacture of Doctors of Dental Surgery, as a collateral boost to impecunious institutions, as it was desirable to place our profession under the ægis of eminent universities, whose degree would be respected wherever it was displayed, and of which the sneer could never be made, as was said of a foreign college, that it "hoped to get rid of its debt—by Degrees." The question of affiliation was not one of precipitate haste. It is not generally the custom among the universities of our Empire to advertise inducements for affiliation, much less to affiliate a college which exists only on paper. We could not decently ask consideration for such a matter, until by at least one scholastic year's work we had given a *raison d'être* for our existence. The Montreal Veterinary College was nearly twenty-five years old before it was created a Faculty of McGill. The dentists of the province have for over twenty-five years elected that their interests and the interests of dental education should be governed and guided by the Dental Board. The public must have educated dentists, as well as physicians, but the dentists must be governed by dentists and physicians by physicians. The highest medical authorities in the world would not presume to dictate the purely practical demands of dentistry. It would be as foolish as futile, to fritter our small force through several disconnected and discordant channels, when concentration of effort, under the most experienced dental practitioners, and under the most eminent universities, is within our grasp.

Just a word to the students. It was Goethe who said, that if a man does one good thing in the world, society forms a league to

prevent him from doing another. In choosing to make your future in the ranks of a very arduous and not a very lucrative profession, it seems to me that if you realize the seriousness of the work before you, you will help rather than hinder the unselfish labors which the teachers and demonstrators voluntarily offer to place within your reach. This business of study is no fool's play. Genius, it has been said, is nothing but constant attention. You will often feel weary and perhaps discouraged, but surely if gray-haired men can face discipline and difficulties, youth has no excuse for fear. By and by we hope to welcome you into the ranks of the profession; but you can never enter except by diligence. If you knew what was before you, you would never wish to enter, unless you were well prepared. To-day is the day of education. The ignoramus must step to the rear. "What will you charge to educate my son?" said a rich Athenian to one of the early philosophers. A large sum was mentioned. "By Hercules! I could buy a slave for the money." "Do so," calmly replied the philosopher, "and you will then have two."

Dr. S. Globensky, the President of the Board of Examiners, gave the following address:

Gentlemen,—The opening of the third session of the Dental College of the Province of Quebec produces a twofold but very different effect. To me, it offers the pleasure and the honor of addressing you; on you it imposes the *onus* of listening to my words.

The pleasure afforded me is not without a tinge of remorse, when I reflect on the task I am called upon to perform, and on my very poor eloquence. You will, therefore, allow me to excuse myself beforehand, and to beg your kind indulgence. Rest assured that if I am obliged to put you on the rack, it is my intention to keep you there but for the briefest space possible.

And to begin with, let me express my very profound gratitude to the numerous and distinguished audience which favors this young and promising institution with its presence. All, no doubt do it, remembering that this college has undertaken to dispense to the young student the means of science necessary in the practice of an art, which ranks amongst the most important and most useful to humanity. Who can deny the importance of the Dental Art, when one stops to consider how intimately it is connected with the enjoyment of those two great boons of life, health and beauty? Is it not, indeed, by the resources found in our art that the dentist repairs alike the ravages of time and those of disease, and is enabled to replace the ivory pearls which Nature has given man, as an ornament, and as the indispensable instruments of mastication? Where are, I ask you, the charms of ruby lips, when from behind them glisten no more the pure, snowy, polished gems? It would be superfluous to undertake to prove that perfect health is impossible,

when the double row of useful servants which a kind Providence has set in our mouths are gone for ever.

Is it to be wondered at, then, that men of serious talent have ever studied the means of helping Nature and of remedying to its defects? Such is the useful art, Gentlemen, students of this college, to which you devote your time and your talents. It is to facilitate your studies and to make them more profitable that those who are your elder brothers in the profession, have undertaken the establishment of this institution. Here, the experience of your professors offers you the learned lessons which will enable you to advance, with honor and success, in your chosen career. I will not stop to develop the programme followed in this college nor the lessons given to our pupils. I will say, though, that in future our curriculum and our lectures will be more complete than ever.

The trials inseparable to all foundations are happily things of the past for this college. It is now of age for the affiliation allowed it by law. It is with pleasure, mingled with not a little pride, that I am able to announce the conclusion of all necessary arrangements with our great educational institutions, McGill and Laval, and to state that before many days the affiliation of the Dental College of the Province of Quebec shall be *un fait accompli*. Our college is highly gratified by the work accomplished since its birth. What will we not do when we advance, hand in hand, with those great schools of learning in the paths of scientific progress; yes, with those schools, the glory of the land.

To the lessons of your professors the eminent men of McGill and Laval will now add their own lore, in order to perfect your education. You will learn anatomy, physiology, pathology and surgery. The study of these different branches of human science, which treat of the body and of health, will prove to you the importance they have in the practice of the Dental Art. "For," as writes Mr. Pierre Sébilean, the learned professor of the Medical Faculty of Paris, "it is not enough to extract, plant, graft, garnish and pivot. Learn a little anatomy. Without it how can you understand dental cysts, mandibulæ, adenitis in caries, carodital adenitis in lingual cancer? Have some knowledge of physiology. Otherwise, how can you explain the stomatitis which appears under the influence of mercurial intoxication or the syncope under that of chloroform? Have an insight into the general laws of pathology. It will make you acquainted with the different evolutions of syphilis and cancer of the tongue. Do not neglect pathological surgery. You cannot afford to ignore the nature, etc., of ulceration of the tongue; they have too close an affinity with diseases of the teeth. I hear some of you say, you ask too much. Yes, it would be too much if you were left to yourselves.

But the different studies prescribed you are but little, because at

your sides are your professors, who have prepared programmes and have learned and studied for you. For you, they have made choice of and prepared the morsel of food, and have cut away the thorns which grew along the road. In your turn, make some efforts to show yourselves worthy of the interest borne you. Remember, also, that your work must prove you worthy sons of a college, which has already done so much for the Dental Art. This institution educates you; reward it by your devotedness to your studies. After all your efforts shall come the crowning. As we have been, so shall you be calumniated and ill-treated. The whole clan of ignorants, sorcerers, charlatans, and men *ejusdem farinae* shall rise against you. But, say, did you ever dream of such glory?"

Truly, one is tempted to believe that the lines I have just read were written for the present occasion, and for the actual state of things. But of this, enough; I do not wish to make further allusion to the subject. According to the promises made us, and I doubt not but that they shall be fully realised, the students of the Dental College, who already have nothing to envy others from an educational point of view, shall receive from McGill and Laval the degree of Doctor in Dental Surgery. Such will be, gentlemen, the crowning of your studies, if you strive for it.

Another word before I take my seat. There is no doubt but that the Dental College of the Province of Quebec has opened a new era, and offers to its students advantages unknown to those who studied for the profession before them. Its progress and success in the past as well as in the future, must be attributed to its clinical dispensary, and to the ever-increasing number of patients to which the college gives its attendance in the interests and for the instruction of its pupils. It is with very legitimate satisfaction that I make the following statement: During the past session months the college has fully done its duty towards poor and suffering humanity, having treated more than 2,000 patients.

I invite those interested in our art to come forward and help us to thoroughly regenerate, by new reforms, the study and teaching of the Dental Art, a profession destined to occupy a high rank among those which render the greatest services to humanity.

Selections.

The Treatment and Filling of Pulpless Teeth as Learned from Papers Read at the World's Dental Congress, A.D., 1893.*

By J. D. BANES, D.D.S., Chicago, Ill.

MR. PRESIDENT AND GENTLEMEN,—The object of this paper is to bring before this society for discussion the methods of treating and filling pulpless teeth, which were presented in papers or exhibited in clinics at the World's Dental Congress, of 1893.

Upon the second day of the session Dr. J. H. Woolley prepared and filled the roots of a superior second molar for a crown. The tooth was decayed very high up, so that the pulp chamber was fully open and all the canals accessible. Dr. Woolley cleaned out the canals with his broaches. He then volatilized alcohol in them by means of a Small's canal dryer. He then thoroughly dried the tooth with Richmond's hot air dryer, and tested the dryness of the canals by inserting the probe of a root canal dryer of his own design, with which you are probably familiar. Next he pumped eucalyptol into the canal, and volatilized it with hot air, so as to drive it to the end of the tubuli, or fill them with vapor. Finally he flooded the canals with eucalyptol, the pulp chamber with chloroform, and inserted some cones. After driving off the chloroform by hot air he dismissed the patient.

The trouble with that kind of a filling is that there is too much liquid used. I question whether the eucalyptol passed to the apical foramen, and I do not believe that the gutta-percha, upon which we must depend to stop those passages permanently, passed so far. When the cone reached the small portion of the canal it would act as a piston and drive the liquid through the foramen, producing pain, the operator concluding therefrom that his filling was complete; but we think in time, and in a short time at that, the eucalyptol will diffuse away, leaving the apical portion of the canal above the cone unfilled.

On the third day Dr. W. H. Richards exhibited his method of filling tortuous canals with a metallic fiber. He cleaned out the canal and moistened the walls with oil of cassia, pumping it in with a broach. He picked up the metallic fiber on the moistened broach and passed it into the canal, working it up until by the sense of touch he determined that it had reached the apical foramen.

* Read before the Odontographic Society, May, 1894.

This method seems to me to be open to many and very serious objections. First, I do not believe any man can be sure when he has reached the apex with his metallic fiber. In ninety-nine cases he will force it through the foramen, or stop before reaching it, to one where the fiber would just pass to the foramen and stop there. Second, the fiber does not fill the canal, and the tooth is left only a little better off than it would be if the canal were entirely empty. Third, if you can get a probe, into a canal you can file a gold wire as fine or finer than the probe and after pumping in the chloro-percha you can drive in your gold wire. The chloro-percha will fill in around the wire and you thus have a more perfect filling than is afforded by a loose metallic fiber in the canal. Still further, if you can pass a probe part way into a canal, with patient effort you can fill that canal to the end with solid Hill's stopping.

In the discussion of the question "Can apical pericementitis result about a root that has been thoroughly sterilized and filled?" some valuable points were brought out. Dr. Fernandez said that he hoped the time would come when arsenic would no longer be used to devitalize the pulps of teeth. He dwelt upon the fact that we are using a very strong and uncontrollable poison, that we do not know how far its energy extends, or exactly how it acts in devitalizing the organ. He advocated some mechanical method, giving gas, if necessary, to avoid the pain. If obliged to use arsenic he would use only enough to devitalize the body of the pulp and desiccate the rest with tannin and glycerine or tannic acid in glycerol. If he could not then remove all of the tissue he would digest it in pepsin and wash it out. Dr. Fernandez said he thought a large number of cases of pericementitis were caused by the action of the arsenic or the poisonous medicaments used in the destruction of pulps.

Dr. I. P. Wilson pointed out the way in which the arsenic probably caused the pericementitis. If you will notice a longitudinal section of a tooth you will see a small portion at the apex of the root that is entirely composed of cementum; this small portion of cementum is undoubtedly nourished by blood vessels from the pulp, and if the pulp is devitalized by the arsenic beyond this point its nourishment is cut off. It then acts as a source of irritation, causing that permanent uneasy feeling at the end of the tooth. That portion of the tooth is prone to become necrosed after the death of the pulp, as is shown by the number of cases of chronic abscesses, which cure up nicely after drilling in and cutting off the end of the root.

During the same discussion, Dr. A. O. Rawls, of Lexington, Ky., said that to protect the teeth perfectly it was necessary to fill the canals to the end, and also the tubuli of the dentine to their extremities. In order to do this he advocated drying the entire tooth from crown to apex with hot air. Then applying some

ethereal solution as a varnish, that will fly like a flash to the farthest extremity of the tubuli.

I would want to try a good many experiments with teeth in plaster and wet plaster, so that I could test the method by microscopical examination, before adopting the method in the mouth.

On the fourth day of the session, the paper of Dr. Poinso, of Paris, France, upon the subject of the "Extraction of the pulps of teeth in a calcified state by trepanning," was read by the chairman of Section IV. The Doctor claims that physiology teaches us that the teeth receive their nourishment from two different sources, viz: the external and the internal; the external life of the teeth through the periodontal ligament, and internal through the pulp, the function of which consists in securing the calcification of the organ in the internal part of the periphery, diminishing the pulp chamber in a progressive way. Calcification is generally complete at the age of thirty-five or forty years, and no matter what the cause may be, either local or general, when once calcification is complete he considers it advantageous to perform the operation of trepanning, which he accomplishes by drilling through the axis of the central pulp chamber, using a small drill for single rooted teeth, and a large drill for teeth with more than one root, carefully removing the enamel at the spot where the drill acts, by the use of drills made from small diamond chips. The way to extract the dental pulp with muscular fillet attached is by the use of a nerve broach, which is used after obtunding the tissues with cocaine phenate, or if root canal is mechanically inaccessible, by the use of electro-cautery. Finally, by filling the canals and remainder of cavity in the usual way. He suggests two ways of indicating when calcification is complete. First, when the gum following the periodontal ligament surrounds and enclasps the crown of the tooth. And second, by a careful examination by means of an electric light.

The Doctor's patients have the sympathy of the author of this paper at least, if not of my auditors, inasmuch as his ideas as set forth in the paper presented, necessitates the wholesale slaughter of pulps, without any exception, as soon as the calcification is complete—which is claimed to be from thirty-five to forty years—in order to preserve their usefulness and longevity. Such a method of treatment may possibly be excusable in Paris, but for the sake of humanity keep the Doctor and his trepanning on the other side of the water.

The first of the two papers on the treatment of root canals was that sent by Dr. Miller, of Berlin, Germany. It was read in the general session of the third day. The paper reports his experiments with methods to avoid the removal of dead pulps from the canals of bicuspid and molars. The method is one of mummification. The object sought is to find some substance with

which to impregnate the remaining portion of the pulp, so that it will not decompose in the future. He points out seven characteristics or qualities, which are briefly :

1. It must be a strong antiseptic.
2. It must be soluble and diffusible.
3. It must not be too soluble and diffusible.
4. Coagulating action is desirable.
5. It must not be irritating to the pericementum.
6. It must not discolor the tooth.
7. Solids are better than liquids.

The only substance that I know of that meets all these conditions is gutta-percha in a clean, aseptic canal.

The first method used by Dr. Miller was to remove the body of the pulp after completely devitalizing it by the application of a small tablet containing

Sublimate (Hy. Clo.)	0.01 gram.
Boracic Acid.....	0.02 "

Or,

Sublimate	0.01 gram.
Sodium Chloride	0.02 "

The tablets were applied, crushed slightly and moistened, then covered with a layer of gold foil and the cavity filled. But in about 30 per cent. of the cases this method caused violent pain because of the rapid diffusion. The painfulness resulting from the use of the first compound led to the use of

Sublimate.	0.0075 gram.
Thymol.....	0.0075 "

The thymol was used to prevent the too rapid diffusion of the sublimate. He also used

Sublimate	0.005 gram.
Thymol	0.005 "
Tannin.....	0.005 "

But the tannin discolors the tooth. He also used the cyanide and the salicylate of mercury, but expressed himself as having achieved the best results from using diaphtherin (oxychinaseptol), a new antiseptic recently introduced by Emmerich. The Doctor reports that in over two hundred cases at the University of Berlin, where this method had been used, only one failure had come to his knowledge, which we are constrained to admit is a good record if he, in fact, heard of all that failed.

As Dr. Miller observes, such a method can only be fairly tested by time, and in any case should be used very seldom, and only in teeth that would otherwise be treated by the forceps.

I think we had all looked for a valuable paper from Dr. Miller, but I must confess I was very much disappointed in it. I think that as with the mastery of geometrical science, no royal road to an easy solution of the most difficult problems has yet been blazed

out for the student's guidance, so with root filling in dentistry, no absolutely perfect and easy method capable of universal application has yet been discovered.

And as Dr. Miller admits the present method of filling the anterior teeth is not likely to be improved upon, and can be trusted to give success in a respectable number of cases, is it not fair then to say that the greater number of failures in filling the molars and bicuspid are due to the carelessness or impatience of the operator? In my opinion two things are absolutely necessary in the treatment of a root canal. First, it must be aseptic. Second, it must be sealed at the apex and the pulp chamber. I believe it would make little difference if the canals were absolutely empty if the apical foramen and the crown cavity were positively sealed. But to seal the foramen all the rest of the canal must be filled. Dr. Miller's method does not provide the second condition, and so long as the apical foramina are open so as to make the canals receptacles for serum, trouble is sure to follow sooner or later. I think for myself I would sooner extract a tooth than to make such an operation simply to save time and expense. If the tooth could be temporarily saved by this method it would surely be saved longer by a careful filling.

In the discussion of this paper Dr. Frank Abbott, of New York, brought out his method of filling root canals. In the first place, he said that he very seldom used arsenic to devitalize a tooth pulp, and when he did so it was only to relieve pain.

When a tooth comes to him for treatment, with the remains of a dead pulp in it, he opens into the pulp chamber so that he can have easy access to the canals. He then uses a one in ten thousand solution of the bichloride of mercury (one grain to twenty ounces), syringing out all the canals as thoroughly as possible. With a broach he probes into the canals so as to stir up the contents, and syringes again, repeating the process until the canals are clean, and the solution in coming out will not stain a white napkin. When he has thoroughly washed it out he fills it with oxochloride of zinc, to which he adds one drop of a one in two thousand bichloride solution. He said this is the material that mummifies or holds the substance which remains in the root of the tooth in such a condition as to give no trouble. He cleans out the canals and fills at the same sitting, before dismissing the patient, painting over the gum with aconite and iodine, as a counter-irritant.

The paper on this subject which has created the greatest amount of interest was that presented by Dr. Emil Schreier, of Vienna. He has given us a positively new method for removing dead and putrescent pulps, and all operators are interested in it because the value of such a new method can only be tested by a large amount of clinical experience.

I presume you are all familiar with his method. He prepares a

mixture of metallic sodium and potassium (about two parts sodium and one part potassium) of such a consistency that when a platinum broach is plunged into it, through the parafine coating, a film of the alloy will adhere and be carried on the broach, and the broach thus laden is passed into the moist canal. The metal decomposes the watery contents, liberating the hydrogen and forming the hydrides of the metals (caustic potash and caustic soda), which in the nascent state actively decompose the organic matter of the pulp, saponifying it (if that is a proper term to apply, as there is little or no fat in the tissue). At any rate, the tissue is actively decomposed and rendered soluble, so that it is readily washed out with water.

The substance destroys the germs present partly by the heat evolved and partly by the chemical products. Of course this method is only applied with the rubber dam in position to protect adjacent tissues.

The questions which arise in connection with this method, some of which were suggested by Dr. Schreier, are :

1. Is there danger of forcing septic matter through the apical foramen, when the broach is first plunged into the canal ?
2. Is the heat evolved too great ?
3. Is there danger of an explosion ?
4. Is there danger that the substances formed will pass through the foramen and set up irritation of the peridental membrane ?

The latter is far the greatest danger. I would be very much afraid that in case of an open foramen, some of the caustic substance might get into the apical space, and if it should, trouble would doubtless manifest itself.

In connection with Dr. Schreier's paper, I have consulted some fifteen dentists in good practice regarding the Doctor's method, and found only two of that number who have ventured its use since Congress adjourned, and one of the gentlemen was very much gratified with the results, whilst the other's experience was quite the reverse.

I have since been advised that other gentlemen present have used this method in their practice before the meeting of the World's Dental Congress last year, and some of them with much satisfaction, and we should certainly be pleased to hear from any such parties.

Through the courtesy of Mr. Fred Noyes, I am enabled in this connection to submit the following letter from Prof. Noyes, of the Rose Polytechnic Institute, of Terre Haute, Ind., a prominent chemist in our sister State, regarding the chemical action of the compound used by Dr. Schreier. Prof. Noyes' letter is as follows :

"I do not see how anything could be gained by the use of metallic sodium and potassium in the manner you indicate, which

would not be gained equally as well by the use of sodium hydroxide, or potassium hydroxide, and with far less danger. The metals I should think likely to lead to ugly accidents in such a use. The hydroxides would, I think, have little effect on bony tissue, fats would be saponified, and other organic matter in general would be disintegrated by them."

We had hoped to have access to the official publication of the entire transactions of the Congress, but owing to delays of various kinds it has not yet been published — *Dental Review*.

Editorial.

The Horace Wells Celebration.

A very interesting meeting in honor of the memory of Dr. Horace Wells will be held in Philadelphia on the 11th of next month. Prof. Thos. Fillebrown, of Boston, is to read a paper on the "History of Anæsthesia," and Prof. James E. Garretson on the "Benefits of Anæsthesia to Mankind." A banquet, at which there will be appropriate addresses, will be held, and a souvenir volume of the event will be issued. It is further proposed that at the meeting, subscriptions will be invited for a permanent memorial.

We venture to draw attention to the fact that Dr. Wells did not "*discover* the anæsthetic properties of nitrous oxide," though we must admit that, like many others, we have been under the misapprehension that he had the claim of priority. In the *Canada Journal of Dental Science*, in September, 1871, we wrote editorially under this belief, instigated by a meeting of dentists at Hartford, Conn., and the request of the late Dr. J. H. McQuillen. At that time the widow of Dr. Wells was in very poor circumstances, and she had declared that "the discovery of her husband had been to her and her family an unspeakable evil, for it cost the life of her husband, and substituted the *res augusti domi* (scanty fortune) in place of a lucrative profession and a happy home."

Unquestionably, to Horace Wells, then a dentist at Hartford, Conn., is due the inestimable blessing to mankind of the practical application of nitrous oxide. On the evening of December, exactly fifty years ago, Dr. Wells witnessed its administration by Mr. Colton, and observing that one of the patients was unconscious of severe bruises he sustained during the excitement of the anæsthetic, he there and then stated that he believed it could be used for painless extraction. The following day he inhaled it,

and the late Dr. J. M. Riggs extracted a molar. Upon his recovery, Wells exclaimed, "A new era in tooth-pulling!" Wells carried it into general surgery as well as dental practice. No one can deny to his memory the lasting tribute of applying nitrous oxide as an anæsthetic.

However, historical accuracy and the correct use of words demand that there shall be no mistake as to the "discovery." Sir Benjamin W. Richardson, in an article in *Longman's Magazine*, proves that "by every rule of justice and of truth, Sir Humphrey Davy deserves the credit of the discovery, and that Horace Wells is entitled to the credit of the practical application of the discovery by a test performed upon himself." In 1759, Sir Humphrey tried the effects of nitrous oxide upon himself, and has left us a graphic description, and suggested in the following words its practical use: "As nitrous oxide, in its extensive operation, appears capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place." His "Researches on Nitrous Oxide," published early in the present century, prove, moreover, that he used it to relieve himself of violent attacks of toothache.

Harris' "Principles and Practice": "The anæsthetic effects of nitrous oxide was first suggested by Sir Humphrey Davy in 1776, and practically demonstrated by Dr. Horace Wells." Harris' Dictionary of Dental Science: "Sir Humphrey Davy, in 1799, first discovered its anæsthetic properties upon inhalation, and in 1844, Dr. Horace Wells, of Connecticut, applied it to dental purposes."

Dr. James E. Garretson's "System of Oral Surgery": "Nitrous oxide owes its discovery to Priestley, 1776. Credit for its use as a pain-obtunding agent is due both to Sir Humphrey Davy and Dr. Horace Wells; to the latter particularly."

"The History of American Dentistry," prepared under direction of the American Academy of Dental Science. 1876: "This gas, as such, was discovered by Priestley in 1776. Its exhilarant and anæsthetic properties were first noticed in 1800 by Sir Humphrey Davy."

Dental Cosmos, June, 1860, page 594: "With regard to priority in suggesting the use of nitrous oxide in surgical operations, the credit undoubtedly belongs to Sir Humphrey Davy," and . . . "the credit of first making a practical application of this suggestion unquestionably belongs to Horace Wells."

Dr. J. F. B. Flagg, in his work on "Ether and Chloroform," refers to the history of the introduction of nitrous oxide by Dr. Wells, but recognizes Sir Humphrey Davy's claim of first suggestion.

However, that is a very unimportant matter in comparison with the value of Dr. Wells' share. The dental and medical professions recognize the great blessing which followed the unselfish and

self-sacrificing efforts of the latter. The monument to his memory in the public park of Hartford was contributed to by Britishers and Canadians, and the engrossed testimonial from England to Mrs. Wells referred to her late husband as one "to whom the world is indebted, not only for the introduction of nitrous oxide gas as an anæsthetic, but also for giving that impetus to the study of anæsthesia, which has resulted in the introduction of chloroform, bichloride of methylene and various other agents for affecting that purpose."

We appreciate most heartily the duties assumed by the Committee who have undertaken to commemorate the fiftieth anniversary of Dr. Wells' share; but with all possible good-will we would suggest that the word "discovery" be omitted, and that the resolution passed by the American Dental Association in 1864 be adhered to, "That to Dr. Horace Wells (now deceased) belongs the honor of *the introduction* of anæsthesia in the United States of America." He could not have greater glory if he had really been "the discoverer" of nitrous oxide.

Obituary.

Whereas, the members of the British Columbia Dental Association have learned with deep regret that Divine Providence, in His inscrutable ways, has seen fit to remove, by death, our late brother, Dr. C. E. C. Brown, of New Westminster;

Whereas, the professional character of the deceased was such as to command the love and respect of his professional brethren at large; therefore

Resolved,—That in the death of Dr. C. E. C. Brown, the Dental profession has been deprived of one of its most active, efficient and honorable members.

Resolved,—That we, the members of the British Columbia Dental Association, deplore the grievous loss which the family have sustained, and cordially sympathize with them in their bereavement.

Resolved,—That the Secretary be instructed to forward a copy of these resolutions to Mrs. C. E. C. Brown, and furnish a copy to the DOMINION DENTAL JOURNAL.

J. M. McLAREN, L.D.S., }
 A. J. HOLMES, D.D.S., } *Committee.*
 LEWIS HALL, D.D.S., }

Victoria, B.C., October 4th, 1894.

Two rooms, ground floor, best locality in Toronto, used as medical office for ten years, vacant about February. This is a splendid chance for a student expecting to remain in city. For particulars apply to DOMINION DENTAL JOURNAL, Box 418.