

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- Additional comments: /
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Continuous pagination/
Pagination continue
- Includes index(es)/
Comprend un (des) index
- Title on header taken from: /
Le titre de l'en-tête provient:
- Title page of issue/
Page de titre de la livraison
- Caption of issue/
Titre de départ de la livraison
- Masthead/
Générique (périodiques) de la livraison

DOMINION DENTAL JOURNAL.

VOL. V.

TORONTO, AUGUST, 1893.

No. 8

Proceedings of Dental Societies.

NOVA SCOTIA ASSOCIATION.

We have much pleasure in giving in this issue all the papers read at the annual meeting of our Nova Scotia Association—a hint to our other Provinces.

Dentistry: Past, Present and Future.

By A. C. COGSWELL, D.D.S., Halifax, N.S.

Mr. President and Gentlemen:

I have chosen for my paper, to be read before your second annual Dental Association meeting, this subject, "Dentistry: Past, Present and Future."

Possibly you will indulge me by allowing one who has devoted the past forty years of his life in introducing in this paper some personal reminiscences and experiences during the past two decades in connection with dentistry. While I desire to refer to the profession in the past, present and future, I may be allowed to review from journals, periodicals and memory, some things that may be of interest to many in the profession. I must remind you, however, that those starting now in the practice of dentistry have far greater advantages and opportunities than those of my day, forty years ago, and, from this standpoint, we may look to the future for greater advancement than in the past, and "from those who have much, much will be required."

Of the remote past, history has given us little light on the methods adopted many centuries ago to alleviate pain and suffering caused from diseased teeth. Some 460 years B.C., Hippo-

crates refers to fixing the teeth, probably some dental operation. In the sixth century, Celsus and others had vague ideas of the treatment of the dental organs. In 1747, dentistry was practised by John Hunter, and in 1786 by Bourdett. In 1800 it was practised more commonly. During a visit to Washington, D.C., in the year 1865, I examined a set of teeth made for and worn by Geo. Washington, the first President of the United States of America. The case represented a complete set of human teeth on bone plate, to which were attached gold spiral springs. The work had been done somewhere between the years 1782 and 1792, as Washington was born in 1732, inaugurated President in 1790, and died at the age of sixty-seven in the year 1799, and we may conclude that the work was not less than at least 100 years old, or made about the year 1792.

In 1800, barbers, watchmakers and cheap mechanics practised upon teeth for simply the money to be obtained for a livelihood, and decoyed many, like the spider and the fly, by advertisements and circulars, by inviting them to walk into their parlors, where all kinds of work was done at the cheapest possible rate. In 1851, while on a visit to St. Louis, my attention was directed to a sign on one of the principal streets, which read as follows: "Cupping, Leaching, Tooth Pulling and Barbering done here;" and in front of the sign was the barber's pole. Coming down still later, in the year 1890, a gentleman passing along one of the principal thoroughfares in the great city of New York, had two handbills presented to him, which set forth the qualifications and abilities of the first as a professional boot-black; the second, the dentist, as a business man.

The first circular read as follows: "Professor Johnson, specialist, begs to call your attention to his parlors on 49 Cortland Street, N.Y., where you may have the encasements of your *pedal* extremities illuminated or lubricated for the Infinitesimal sum of five cents, in a truly scientific manner. The place is lighted throughout by incandescent light; the boys are polite, and work with elastic rapidity. Your valise, bag, cane or umbrella checked at all times; try me." The second circular, headed "Dentistry," was as follows: "Dr. W. F. Nistop, Dentist, No. 999 15th Avenue, N.Y., for nearly twenty years with Dr. Dear, of this city, begs to announce that he has established himself at the above address, with every facility for doing a first-class dental business in all its various branches, at the following low rates: Teeth extracted, 25 cents; Gas, 50 cents; Gold fillings, \$1 upwards (with gas 50) according to labor. Best artificial sets at cheapest rates, only the best material used, satisfaction guaranteed. Fresh laughing gas daily. Open from 7 a.m. to 8 p.m. Sundays all day. Call and get my prices before going elsewhere." One would almost imagine that some of the advertisements seen in our Dominion papers

within the past few years or at the present time, had been carefully copied from the above, especially the latter part. A writer signing himself D.D.S., in the *Dental Advertiser* of 1890, referring to the above advertisements or circulars, remarks as follows: "Not any wonder that the dentist dies poor, and that the patients regard him as a very common sort of a person, when the dentist himself calls his profession a business, and the boot-black his business a profession. Which of the two is going up in the scale? and which of the two is likely to have a monument, and a decent burial?" Gentlemen, allow me to say just here that while we may have such persons in the profession who do not respect themselves, either in the United States or in the Dominion of Canada, not enough even to respect the profession, it is not so in England, which we may be proud of; the very country so late in taking hold of the profession, has now set an example, that not only we of the Dominion would do well to follow, but those especially in the United States of America. The English standard of professional status ranks higher than in any part of the world. In the *British Journal of Dental Science* we find it stated that in England the register of dentists is kept by the Medical Council, and the government of the profession practically rests with the medical men. In England, the idea is that reputable dentistry has something to do with medicine. To obtain a place upon the register, the applicant must possess the necessary certificate granted by a competent Examining Board, and it is required that the student or applicant, be he graduate or not, shall sign an agreement, that in case he subsequently attempts to attract business by public advertising or circulars, or shall indulge in any practice considered by the Examining Board unbecoming to the profession, or to a professional man, the diploma shall be cancelled, as was done recently in the case of H. F. Partridge, a graduate of the Royal College of Surgeons in Dublin, Ireland. The Doctor's diploma was cancelled, and his authority to practise dentistry revoked by the Board of Examiners, and sanctioned by the Court of Appeal in England.

Begging pardon for not following more closely an intended outline, I now return to the last part of the seventeenth century and the beginning of the present, in reference to dentistry, and which might be called the bone period. The bone workers and mechanics in those days in England were willing to earn a dollar a day for their services, in constructing plates for those who employed them. These frames or plates, as we may name them, were made from bone, ivory, or hippopotamus' teeth, filed and carved to models made to fit, as well as could be, from impressions of the mouth, and human teeth attached to these frames by means of pins, screws, or otherwise. For a full set, spiral springs were attached to each case to enable them to be worn. Partial cases were either

wired or ligated to the natural teeth and allowed to remain oftentimes for years, or until the loss of the natural ones to which they were attached, before these fabrics were removed from the mouth for even comfort and cleanliness. Partial cases were also made from one piece of bone, with the teeth filed, cut and shaped to suit the case. The case, No. 1, will illustrate the latter method, and was made in Halifax, by Dr. L. E. Van Buskirk, in 1822. The case, No. 2, which I now present for your examination, came into my possession twenty-five years ago, and was made for and worn by a lady of wealth and position in this city, long since deceased. This case was made in London about the year 1820 or 1825, and worn until I replaced them with a full set on gold plate with block teeth. Many methods were resorted to to secure and obtain sound and perfect human teeth to attach to the bone plates. Advertisements were inserted in the daily papers in England, offering to purchase perfect teeth from those who were disposed to sell; and many among the poor and unfortunate found sale for those organs, and when a price was agreed upon between the two parties, the teeth were removed.¹

During the Crimean War, it was said the teeth of some of those slain in battle were removed for the purpose of selling them to dentists for artificial dentures, and when I first commenced to practise in Halifax, in 1860, it was asked by many if natural teeth for artificial sets were used, so general had become the idea that dead people's teeth were the only kind inserted, many objecting and refusing to have sets or partial sets for fear of wearing other people's teeth, as was frequently remarked.

How teeth were removed, or by use of what kind of instruments, we are led to infer that the hawk's bill or turn key, so called, was the instrument then in vogue, as forceps were not in use until the year 1839. This ancient instrument, the turn key, was made with handles at right angles with the shaft, so that both hands could grasp it at once; there were hooks curved and of various sizes, to be attached to the extreme end of the shaft, so as to go over the top of the tooth to be removed, while the bulb of the instrument would be carefully secured and wound with an old handkerchief or a piece of cloth, partly to lessen the pain sure to be produced by using the inside of the jaw and process as a fulcrum when extracting, and particularly to fill the patient's mouth so as to prevent any audible sound during the operation; and if one or even two teeth came forth with a large part of the process, the operator exultingly held it up, exclaiming, "Thank goodness, the jaw is not broken;" while in some cases the operator found, to his sorrow, that the patient had to call in the services of a surgeon to repair damages.

It was my fate in 1843 to have a molar removed with the turn key, my head between an assistant's knees, who stood behind my

back, while I was seated on a low stool, and the operator in front performed the terrible deed. One such experience is enough in one lifetime. Instruments for removal of teeth were said to have been found in the ruins of Herculaneum and Pompeii, but as they were made of lead, it was supposed they were more humane in those days than later on, as the lead instruments could be used only for removal of loose or deciduous teeth. I have sometimes wondered what instrument was used for the removal of the Jew's ten teeth in the time of King John, before the money was exacted from him by the king. One of the most primitive and barbarous methods was resorted to in Cornwall in 1849, and the particulars related to me by the Hon. Dr. Wm. Webster, of Kentville. A certain expert, a blacksmith, whose name I forget, near Kentville, in attempting to remove an upper molar for a farmer, used a spike and hammer, and in so doing, fractured so large a portion of the superior maxillary process that the doctor removed two teeth with the process united that had been detached and forced into the palatal portion of the mouth, and only held in position by means of the gum and mucous membrane, and resulting in an opening into the antrum and defective speech for life.

It was in 1839 the *American Journal of Dental Science* was first published by Drs. Harris and Parsley, and the American Society of Dental Surgery began its existence in 1840. The first dental school was in Baltimore, and up to 1854 three dental colleges were struggling for an existence, with no instructor in two of them in operative or mechanical dentistry. One of the first graduates of the first class in 1841, was B. Covington Mackall—fifty-nine years ago. Dr. Mackall was living at Elkton, in Maryland, in 1887, enjoying good health, and a member of the Maryland Legislature.

In 1848 the *Dental News-Letter* was first started, now our prized and valuable *Dental Cosmos*.

To America belongs the honor of first establishing colleges, schools and dental journals for the purpose of advancing and educating those who desired to make dentistry a specialty, while it is only during the past six years that England established schools and colleges for dental education, and last, but not least, our own Dominion has not lost sight of the need for educating dentists by also opening dental colleges.

To go back forty years of my own experience in the particular branch as a dentist which I have followed most persistently and closely, and note particularly all the improvements and advancement made since 1852, would not be possible nor even desirable; but let me say here, gentlemen, in spite of all the modern improvements and new appliances, and better facilities for doing good work, I can testify that, even with the so-called crude methods of operating, I can show in my mouth two gold fillings still in excellent condition, made by a Portland dentist, using Abbey's foil and

non-scrated pluggers, hand pressure, and seated in an ordinary rocking chair, which speaks volumes for honest dentistry, even at that period. Ether and chloroform were not generally used, as ether was introduced in 1847, and Dr. Morton was credited as being the discoverer. Gold, silver and platina plates were used for artificial dentures. Block teeth were manufactured by the leading dentists in Boston, New York and other cities. In Portland, Dr. Parsons, with whom I was studying at that time, as well as Dr. Salmon and Dr. Coffin, manufactured their own blocks, also made continuous gum work mounted on platina plates and gum baked by Dr. Allen's recipe. Single plate and gum teeth were used by others; they were supplied by the old firm of Jones, White & McCurdey. It was not until 1854 that vulcanite rubber was used and introduced. The first case made in Halifax to my recollection was in 1865, and vulcanized for three hours in a ten-gallon vulcanizer. Gutta percha was also tried, but proved a failure. A case was made on gutta percha plate, single teeth, for a sea captain, ready to sail for the West Indies—result, total collapse after wearing only a few days. In order to use the vulcanite rubber, we were obliged to pay to the patentee an office right of \$100, which after some years was abolished.

From 1852 to 1872 advanced strides and improvements continued to be made in dentistry, leading up to more rapid and better success in operative as well as prosthetic dentistry, celluloid plates, the rubber dam, automatic pluggers, cohesive gold, dental engines, serated pluggers, hand mallet and numerous other appliances too great in number to be enumerated at the present time. In those days, Boston, Portland, New York, Philadelphia and other large cities of the United States could boast of the highest professional skill and intelligence. Among the leading dentists of those cities were the names of Drs. Tucker, Weatherby, Harvard, Salmon, Parsons, Goodnough, Flagg, Osgood, Alport, Codman, Greenwood, besides a host of others. Quite a number of these gentlemen I had the pleasure of knowing intimately, and was associated with four in business. The reputation acquired by Drs. Harkell and Salmon, with whom I was associated in Boston, and Dr. Edwin Parsons, in Portland, stood second to none at that time. The former could not be surpassed in prosthetic dentistry and manufacture of block teeth on gold plates and continuous gum work on platina, as well as partial sets on silver and gold plates. Dr. Salmon is still in practice in Boston, and is the inventor of several dental instruments. Dr. L. P. Harkell's name has become familiar to many down to the present day, and the genial, kind Doctor still follows his profession in Chicago, having given to the profession valuable works on dental prosthesis, and having contributed various articles to our dental journals. A certificate for dental prosthesis is now in my possession, presented by Dr. Harkell while associated with him in 1856, which I prize most highly.

Nitrous oxide gas has been gradually introduced as an anæsthetic agent for the removal of teeth and surgical operations. It was first known as laughing gas. As early as 1849 it was administered at entertainments for the amusement of the public, and its effect on individuals, as given at that time, produced oftentimes strange and peculiar results, showing the disposition very markedly of the individual under its influence, and his pugilistic tendencies. As early as 1850, it fell to my lot, at Wolfville, to test its peculiar qualities previous to an entertainment to be given on the following evening by a certain professor who was travelling the country.

The Colten Dental Association of Boston was the first to use the nitrous oxide gas extensively for the removal of teeth, and later on, Dr. Thomas, of Philadelphia, made a specialty in that way.

From anæsthetics, the average death rates are said to be as follows :

One.	in	100,000	from	Nitrous Oxide Gas.
"		10,000	"	Ether.
"		1,000	"	Chloroform.

During the last twenty years, from 1872 to 1892, schools, colleges, societies, journals, books and periodicals have largely increased, and the latter more generally read and circulated. All these have a tendency to advance and educate, especially the younger members of the profession, and stimulate the older ones, so as to keep pace with the times.

In looking over the list in the Dental Necrology for the past twenty years, we find some 364 men of more or less prominence in dentistry have passed away, some just entering the profession, others of long standing and residents of the United States, while scores of names not enumerated, in England and the Dominion, have gone to their long home. The Abbeyes, Abotts, Allens, Ambler, Atkinson, Parmley, Riggs, Webb, Harvard, Knapp, McQuillan, Kingsley, Neal, Chandler, names familiar to many, all had their day, and each and all have left names to be honored and revered, and whose works still live, and who have left their "foot-prints on the sands of time."

With all the improvements made in the profession during the past forty years, those who remember what facilities were offered them then in practice, and the present opportunities and methods of working, both in mechanical or prosthetic dentistry, as well as conservative dentistry, have no reason to feel ashamed of their professional skill, and while many who have now passed away have done much to elevate and advance the profession, by their skill and honest worth, as well as by their professional and gentlemanly deportment, gentlemen, let us not forget that to be members of a profession conveys with it certain privileges and rights that should be respected by each and every member. As a Dental

Society we should guard jealously the good name of the profession, let us profit by whatever errors or mistakes made in the past, and learn to draw the professional line, as they are doing in England, so that, as professional men, we may become actuated by a true professional spirit—but that day will not be hastened by ridiculing the professional tendencies or aspirations which should be cultivated, or by endeavoring to foster the idea that dentistry is a mere mechanical trade, having no affiliation with medicine, or any right to a professional code of ethics.

May the near future place this Society and every member of the dental profession where its freedom and privileges shall be sustained and guarded as in England, and all advertisements beyond a professional card considered disgraceful and unprofessional in our profession, as in law and medicine, and by those who fill our places forty years hence, may it be said of us, as we can truly say of many in the past, "They labored not in vain, and their good works follow them." Let us be united, press on with honest and true principles of right, with hearts within and God overhead.

Preservation of Deciduous Teeth.

By F. W. STEVENS, D.D.S., Halifax, N.S.

Mr. President and Brothers of the Profession.

The subject on which I intend speaking, "Preservation of Deciduous Teeth," to my mind is a very important one. I am sorry that I will be unable to say more than a few words upon such an important subject as I think this to be.

First, I shall give my reasons for preserving these teeth.

The most important reason is the prevention of irregularities. I do not say, gentlemen, that early extraction of the milk teeth is the only cause of irregularity, for, as we all know, there are other causes. We know that the permanent teeth are much larger than the corresponding ones of the deciduous set. This being the case, they require a larger alveolar arch and a correspondingly larger jaw bone for their accommodation. This nature provides by interstitial growth which is hastened as the teeth make their way into place.

Now, when the first permanent tooth, or six-year molar (commonly called) makes its appearance, it must provide accommodation for itself, which it does by forcing its way between the second deciduous molar and the maxillary tuberosity above and the ramus below. As the permanent molar is the largest tooth in the arch, and the arch not having developed to any great extent

during the six years previous to its eruption, the pressure must therefore be felt by all other teeth in the arch.

If therefore the deciduous molars, or I will say any of the deciduous teeth in the arch, be extracted before the eruption of the permanent molars, will not the permanent molars come forward more or less and occupy the space intended for the second bicuspid? This being the case, we find the bicuspids, upon eruption, assume an improper position, which was not intended by nature. Now take the deciduous incisors. Extract them before the proper time, which is between the sixth and seventh years. What do we find? Why, in most cases of early extraction, we find the permanent incisors upon eruption have not sufficient room for their accommodation. Now, again, in early extraction of the deciduous molars, we are in great danger of injuring the crown of the permanent bicuspid, as that tooth is found with its crown developed between the roots of the deciduous molar.

This of itself shows that the temporary teeth are intended to remain until the permanent ones are ready to erupt. We find irregularities of the temporary teeth a very rare occurrence. Why will not the permanent ones assume a regular position if they are permitted to follow their predecessors, and the arch at the same time becoming gradually larger for their accommodation?

Does not physiological law teach us that the deciduous teeth should remain until the permanent ones are ready to erupt, so as to subserve the wants of the child until nature has provided it with the permanent set, which are on account of their being stronger than the deciduous, essential to masticate the food, which is beneficial to those who have passed the stage of infancy?

If we deprive the little ones of the instruments which nature has given them for mastication, how are they to derive a benefit from the food which is very essential for them at that period of life?

We have parents presenting their little ones to us day after day, wishing to have their teeth removed. They perhaps do not know the value of the deciduous teeth. It is our duty, as dentists, to implant deeply into the minds of every parent or guardian who bring their children to us, that it is very essential that their first teeth should be preserved until time for the eruption of permanent ones.

We have children presented to us for treatment; say, the deciduous molars are affected by caries so that the pulp is exposed, the tooth having given but little inconvenience to the patient. In this case I would clean the cavity of decay and place over the pulp a solution of gutta percha and chloroform, the latter obtunding the pain, and, as it evaporates, the gutta percha becomes hard and prevents the pulp from any irritation caused from filling material, which in this case would be amalgam, as it is inserted with little inconvenience to the patient.

Suppose a tooth is found with putrescent pulp; clean cavity well from decay, then apply peroxide of hydrogen, injecting it well into canals, then use bichloride of mercury, cleaning canals well. Then dress canals with cotton saturated with oil of cinnamon, iodoform and creosote. Permit this to remain for two or three days, then remove and fill tooth, which can be done in the following way: Place a piece of gelatine in canal of tooth, permitting it to come well up, so as to extend higher than the masticating surface, or it can be made so as to come out from either the buccal, lingual, or labial surface, just as the case may be; then build up filling, allowing it to inclose the gelatine, excepting the end, which must remain uncovered. In a short time the gelatine will dissolve and leave an opening through filling into canals; this will permit an exit for any gas which might accumulate therein, and with little care this opening can always be kept free of any foreign matter, such as food. It is unnecessary to fill canals of deciduous teeth on account of the great absorption of root, and the above treatment will preserve the tooth as long as it is required for use. For all posterior teeth I would use amalgam; for anterior, either zinc compounds or gutta percha. The latter, if properly inserted and surface-finished with chloroform, will form quite a serviceable filling.

In cases where the pulp is devitalized, morphine should be used for so doing, as any arsenical preparation is in danger of absorption by the tissues outside of pulp, on account of the size of apical foramen, which will permit the drug to pass through.

I fully believe, gentlemen, that if more attention were paid to the preservation of the deciduous teeth, we would have better men and women, physically, as they would in their childhood be able to masticate the proper kinds of food. This cannot be when there is nothing to masticate with, and if the proper kind of food can not be received at an early period of life, some member of the body must suffer in consequence. Take the cases of dyspepsia of to-day. What are they mostly caused from? From the digestive organs having been in a weak state, and this, I believe, is all on account of the sacrifice of the deciduous teeth, simply because it is known that the second set are sure to follow.

Let us go forward in the future and educate our patients that those teeth should be preserved, and try our utmost to keep the first teeth until nature has replaced them with stronger ones.

Devitalization of the Dental Pulp and Filling Root Canals.

By M. P. HARRINGTON, D.D.S., Liverpool, N.S.

Teeth are hard substances projecting from the alimentary canal, situated anterior to the pyloric orifice and are subservient to nutrition.

In man we find the teeth situated almost at the beginning of this canal, physiologically intended for the preparation of food before being passed on to the larger receptacle—the stomach.

Among the many diseases which man is heir to, is premature loss of tooth substance, and much is being thought, said and written as to conservative dentistry.

A human tooth, anatomically, is composed of crown, neck and roots; physiologically, of enamel, dentine and cementum; chemically, of phosphate of lime, carbonate of lime, fluoride of calcium, phosphate of magnesia and other salts, also animal matter.

Assuming much the shape, and lying in the interior of every tooth, is a pulp-chamber, containing nerves, blood vessels and tissue. It is to this portion of the tooth we wish to call special attention for a short time.

A tooth receives nourishment from two sources: from the dental membrane, the pericementum, surrounding the cementum of the root, and from the pulp. At the extremity of the root is a small opening, the apical foramen, through which the blood vessels and nerves pass.

Owing to certain conditions the enamel of a tooth becomes soft, disintegrates and wastes away, likewise also the deeper structure, the dentine, and it becomes necessary for tooth salvation that something be done to check further advances of caries, that something be done to restore the dental organ to a state of ease and usefulness.

Caries, for the sake of convenience, is divided into three classes: the superficial, involving the enamel; the middle, involving both enamel and dentine; and deep-seated, involving, as the name implies, the deep portion of the dentine, the part nearest to the pulp.

Owing to the structure and circumstances attending the salvation, it becomes necessary, under certain conditions, to destroy and remove this pulp before attempting to fill and restore the tooth.

Under what circumstances is it necessary to destroy the pulp? What are the conditions for removing this part of the tooth? Let us look to the deep-seated caries, and, in diagnosing tor exposed pulps, note, first, age of patient. The pulp chamber is much larger in children than in adults, and much smaller in advanced life than in middle age. As we advance in years the pulp chamber becomes smaller, owing to secondary dentine forming therein. In well-advanced life, secondary or osteodentine has been formed to such an extent as to almost fill up the pulp chamber.

Next, the situation of the caries. Take, for instance, an incisor; the pulp chamber is more easily reached from the palatal surface than from the masticating or approximal—of a bicuspid, from the mesial approximal; of a molar, from the masticating surface. The

pulp chamber assumes very much the shape of the individual tooth, and in excavating and removing the carious portion, we need to be cautious and on our guard never to uncover the pulp. It is much better to leave a small quantity of half decalcified dentine over it than to remove and substitute other artificial cappings.

Then, again, the character of the caries. In the black kind we do not expect it to extend to any great depth, and, as a rule, do not look for exposed pulps in this class as we do in the brown or white kind. Nor do we look for exposed pulps in superficial or middle, but in deep-seated caries—in the kind involving the deep structure of the dentine.

A patient presents himself or herself, as the case may be, and upon examination we find a carious tooth with exposed pulp, and the question presents itself, Shall we cap the pulp and fill, or shall we destroy and remove it and then fill?

It is advisable to destroy it when it is necessitated by uncontrollable irritation and exposure; when more and increased pain is given in the recumbent position; when there is congestion and throbbing and jumping pain; when it is intermittent with paroxysms of neuralgia; when the tooth is off color and loss of sensation in cavity; when a pulp stone is giving trouble, and when preparing the tooth for crown work requiring a pivot tooth, so called; also when the physical condition warrants, such as a continued state of fatigue, the period following the typhoid state, one subject to malaria, those employed in unhealthy occupations and exposed to great thermal changes.

Here, also, the different temperaments aid us greatly in deciding what pulps to destroy and what to try and keep alive. Experience teaches that with the lymphatics who have large, bulky teeth, with neither strength, density, or good quality, whose teeth are poor, the recuperative power is tardy and feeble, that it is almost impossible to save the pulp when exposed to any extent, and from prognostic results it is advisable to destroy and remove it before attempting to restore the tooth to usefulness.

When called upon to devitalize the pulp of a tooth the manner of procedure will depend upon conditions, whether the exposure be of long standing or of recent, for if of long standing there probably has been pathological change of the pulp, rendering a certain course of treatment necessary before that of devitalization; whether, if there be such change, it be in the form or state of congestion or hyperæmia; whether hypertrophy has resulted; whether a portion of the pulp be in putrescent condition; for while the condition will, to most practitioners, indicate that devitalization is best and for the most part will result, still there are other steps indicated as preliminary or preparatory.

We should make it our object to devitalize the pulp with the least possible pain to our patients, and with as little loss of time to

ourselves as may be. Then, again, we should avoid complication ; for instance, discoloration caused by infiltration of the tubules by disorganized blood ; and, again, by the complication and irritation of surrounding membranes. Hence, when the case has been decided and we have determined to destroy the pulp, we should endeavor to reduce the inflammation and restore the normal condition as nearly as we may deem desirable, and then proceed to the work in hand.

There are several processes by which this result is reached, namely : that of immediate extirpation by use of instruments direct while the patient is in a state of anæsthesia, or by the use of local or circumscribed anæsthesia, as, for instance, muriate of cocaine—crystals or powder—dissolved with carbolic acid in the carious cavity in the anterior teeth and allowed to remain from twenty to thirty minutes. This will, in many instances, produce anæsthesia sufficient to extirpate the pulp and cause little pain in the operation.

Another, and what we may call the heroic method, is where the exposure is large and of easy access—we are speaking now of single-rooted teeth :—To shape a piece of orange wood to fit the canal as near as may be ; saturate it in carbolic acid and drive it quickly into the canal to the apex. This is a very convenient method to destroy the pulp and saves lots of time, but is rather rough on the patient.

Another method is to rotate the tooth or remove it, cleanse the canal and replace it in the socket, under antiseptic influences, and hold there with ligatures. This method we do not approve of—it being painful, besides running the risk of losing the tooth from replantation.

And still another method, which is more universally employed, is by the use of arsenious acid.

When advisable, apply the coffer dam, or otherwise keep the cavity dry, and remove the extraneous matter and carious portion so as to expose the pulp and place the agent directly in contact with it, being careful to use no pressure upon it, and cover it with some material to prevent it working out of the tooth and destroying the surrounding tissue. Cotton, saturated with sandarac varnish, is a good material for this purpose, but a covering made of gutta percha or temporary stopping is preferable: Of all the methods employed for devitalizing the pulp, perhaps this has the preference and is generally used. We find a thick paste composed of arsenious acid, morphine, oil of cloves, cosmoline and finely cut, absorbent cotton, to be an excellent agent as a devitalizing compound. The application should remain in the tooth from two to four days, when it should be removed and the pulp chamber fully opened and the pulp entirely removed to the apical foramen.

It may be found difficult to remove all the tissue at one setting,

if so, give it a day or two longer to slough off. Make a little thread of absorbent cotton, saturate it in oil of cloves and pack into the canal and place a temporary filling in the tooth. On the following day, or the second following, remove the filling. Withdraw the cotton, and if there is no bad odor therefrom, the root is fit to fill. If there is a slight one, repeat the purifying process until you get the distinct odor of the medicament used upon the cotton. Success in root filling depends very much upon the antiseptic condition of the canal, especially that part nearest the apex.

Now, what shall we use as a root filling? There are lots of agents we can employ and use them with safety, taking care to carry the filling to the very end of the canal, and also to avoid pressing any through an enlarged apical foramen. In a tortuous canal we might use a thread of absorbent cotton, saturated in oil of cloves or carbolic acid, or a thread of raw cotton with cosmoline upon it. Both are good root fillings. Or we might fill with gold or tin foil where the canal is of easy access, or with gutta percha or temporary stopping or oxychloride of zinc or phosphate of zinc. Perhaps a small piece of temporary stopping at the apical end and the balance of the canal filled with phosphate of zinc cement, makes as desirable a root filling as we can have. Having completed the root filling, we can fill the crown with whatever material is indicated, and, when other conditions are favorable or normal, we can look forward to the tooth being of service for many years to come.

Necrosis.

By A. J. MCKENNA, D.D.S., Kentville, N.S.

Mr. President and Gentlemen :

On December 17th, 1890, a lady came to my office to have her mouth prepared for an upper denture. Upon examination, I found her teeth in a very decayed state, only one crown being intact, while the roots of all the bicuspid and the root of the right central incisor were completely covered over by the gum. Before extracting, I examined the palatum durum, and directly opposite the apex of the root of the right central incisor there was a slight enlargement. Upon inquiry, I was informed that this swelling or puff had been noticed for more than a year, but had not given any trouble. Upon examination, I found that the palatum durum had been destroyed to the extent in diameter to that of a five cent piece. For the removal of the root and the dead part surrounding the root, I used cocaine—a four per cent. solution. But mere fragments of the root remained, and not only

was the root in this advanced stage of decay, but also the adjoining process. Through some cause, probably that of caries, the tooth had died, or the nerve or the pulp, if you will, then gradually the adjacent process. This we call "Necrosis." By the death of the nerve, the tooth had been deprived of its nutrition, and when any bone is deprived of its aliment, an attempt at separation and exfoliation is an immediate consequence. Whenever there is dead matter, it is more or less irritating, and what we call inflammation is the result. Then nature attempts to rid herself of this dead part.

To understand this, we have only to consider the supply of blood to a part interrupted by an effusion of lymph or by a fibrinous material exuded from blood vessels in inflammation, which lymph proceeds to coagulation, and these globules compress little by little the blood vessels until finally they obliterate them. The result is the breaking down of the part, particle by particle, until finally a degeneration expressive of pus is reached—pus being in reality the abortions of granulation corpuscles. The dead part is now carried away by means of the pus, and the pus continues to form as long as the dead part remains connected with the living part. When all the dead bone is removed and the part is fairly cleansed, numerous particles of granular lymph, called the pyogenic membrane, makes effort to organize itself. This ceases as soon as the part receives sufficient vitality for the act of organization to begin. The part thrown off is called sequestrum, while the part not affected is called vital. The same stage of necrosis is not always found after any definite length of time, but depends very largely upon the systematic energy of the patient; that is, it may be but a few weeks, or it may extend over many months. When this sequestrum is so situated as not to be thrown off, it becomes enveloped in a case of new bone. An instance of this is seldom found, except in case of the inferior maxilla, where it has often been found necessary to break through a layer of new bone to get to the dead. The surface between the dead and vital part is very irregular, and is easily distinguished when in the act of removing the dead part. The "bone-generating" properties or agencies belong to the periosteum, as well as to the bone itself, and as soon as the dead part is all removed, signs of repair may be seen in both, as they both throw out and organize bone pabulum. Even when all the particles of dead bone are removed, there may be some portion of the so-called vital part which needs assistance in the shape of cleanliness and stimulants. Prof. Garrettson strongly recommends the use of aromatic sulphuric acid as an injection, its use being particularly indicated where there is a growth of bony matter or tumor on the surface of a bone, equal parts of the acid and water being an ordinary injection, or it may be used on cotton, the cavity being loosely stuffed. An-

other stimulant and antiseptic from which very satisfactory results are often obtained, is found in capsicum and myrrh (*the tinctura capsici et myrrhae of the Pharmacopœia*). When diluted with water the proper strength is expressed by a bluish white color.

Necrosis is a general term for a dead bone in any part of the body, but when we wish to particularize we have to use qualifying terms such as dental necrosis, mercurial necrosis, syphilitic necrosis, alveolar necrosis, necrosis from injuries, phosphor necrosis, etc. Dental necrosis is the one with which dentists most generally have to deal. As long as a tooth continues to receive nutriment from its threefold source of vitality, it must be in a fairly healthy state, and even when one of these is cut off as is very frequently found, caused by the death of a nerve pulp, which may be called the "internal circulation," a tooth may be kept both a useful member and as an ornament for many years. This may be done by the removal from the pulp chamber and nerve canal of every particle of dead matter, treating with proper antiseptics and finally filling both canal and chamber with whatever material is indicated. When all the dead matter is not removed and proper antiseptics used, or where there is a great tendency to vascularity, the death of the pulp results in its effects being extended to the periodontal membrane causing what is known as periodontitis. If this is not averted in some way the death of the tooth must ensue. When a dead bone is found in most parts of the body, it must be removed or its effects will be extended to surrounding parts. But nature often forbears with a dead tooth for a long time and it may be made of great use. If all the septic matter be removed from the canal, and if no irritating matter be extended to surrounding parts, no evil effects need be expected for years. A tooth is not of necessity dead until both the pulp and its enveloping membranes are dead; then and not till then is its whole source of nutrition destroyed. A tooth decreases in value according to whether one source of supply is destroyed, two sources or the three sources. The artery supplying nutrition to a tooth divides at the apex into three branches, one passing through the apical foramen, thus supplying the pulp, one going to the *tunica propria* and one to the peridentium. Thus if one or even two of these supplies be cut off, the tooth may receive sufficient food from the remaining supply so that it may be retained for an indefinite period. As systems differ so do teeth. No doubt all of us have found teeth that required but little skill to treat and fill and which would give no subsequent trouble, while again we have often to use our utmost skill in removing the dead pulp, treating and preparing the canal, and yet the tooth would be a continual source of annoyance. Some persons may have a whole row of pulpless teeth and yet no inconvenience is ever experienced, while others cannot endure having one in their mouth. This must be due to the condition of tooth or patient, rather than to the skill

of the operator. Dental necrosis must be caused by caries or decay which eventually exposes the pulp; decay continuing, this must die. It may not extend beyond the foramen, the pulp sloughing off. If this is the case the periodontium and middle membrane carry on the full duties of nutrition. We can generally decide as to the amount of nutrition a tooth receives, by its transparency varying from a normal shade to complete blackness.

A dead tooth is not always the result of caries because an inflammation may be caused by blows, or by heat or cold sufficient to produce death. We often see teeth that are black without any sign of decay, yet the pulp is dead having sometime received a blow.

To return to my patient. When she left the office, December 17, 1890, she was strictly charged to return on or before one month. Needless to say she did not keep her appointment. She did not appear again until June 30th, 1892, when she came for the impression. The first day she was at the office after the extraction, by the use of burs and chisels I removed all the dead bone that could be found, and had she returned according to appointment, her mouth would have been ready for a plate in but a few months over the usual time. But not succeeding in removing all the necrosed part at the first operation, and the patient not following instructions in reference to the use of aromatic sulphuric acid (or I might have said in its treatment), when she returned the second time I found the opening not entirely closed up, and on entering the place from which the root had been removed with an instrument, I found many granulations and particles of dead bone, and by the free use of chisel and bur, I removed what I trust will prove to be all that is necessary. In this second operation cocaine was used, so that it was easily borne by the patient; since which time I have had frequent calls from said patient, and am confident that all instructions for the use of washes, etc., have been strictly adhered to. There is no puff now in the arch on the right of the median line. The socket is completely healed up; this was done very gradually. An injection of diluted aromatic sulphuric acid three times daily, followed by pellets of cotton, saturated in the same acid, was forced into the opening and up into the extremity of the socket after each injection. Some days this treatment seemed too much for the patient, and a lesser number of times was indulged. At the end of two or three weeks a much smaller piece of cotton was required, but each piece of cotton every day was forced as far as possible, so that the inside became in a normal healthy state first, after which it was but a short process for the opening to heal. There is now a depression over where the right central incisor had been, also by the pressure of the finger or instrument, it is easily detected where the hard palate was destroyed by necrosis, but, to all appearance, no inflammation exists there now nor in the surrounding parts.

Symptomatology of some Dental Lesions.

By F. W. RYAN, D.D.S., Windsor, N.S.

Pain is undoubtedly one of the most dreaded accompaniments of physical ills, and, as special practitioners of dental surgery, we are frequently asked to afford relief from this troublesome condition in and about the teeth. These pains may result from any one or more of a number of different causes, hence it becomes us as dentists to consider well the methods of determining as to which cause may be operating in any particular case.

The object of this paper, therefore, is not to suggest treatment, but is an endeavor to bring more prominently before us some of the symptoms peculiar to the different conditions, in order that we may proceed in a rational manner to adopt such measures as will bring about the required result.

As it is desired to be as practical as possible, we will not take into consideration those cases which rarely come under our observation, such as extensive inflammation of the maxillæ, necrosis, tumors, etc, but will confine our attention to such as regularly appear at our offices from day to day.

By far the greater amount of suffering we are called upon to treat results from lesions of the dental pulp or the peridental membrane, these being the two sensory organs of a tooth. The peridental membrane is the organ of touch, while the principal office of a normal dental pulp seems to be that of resentment to extreme degrees of temperature, and so, when we are asked why a certain sound tooth is a little sore to bite upon, we know that it is the organ of touch that is affected, probably with a slight inflammation which, in the absence of persistent irritation will usually yield to a little mild antiphlogistic treatment.

The pulp may, and does under other conditions, give rise to sensations when irritated by other than degrees of heat or cold. Sometimes a patient calls upon us, complaining of quite severe paroxysms of pain, induced by something sweet or sour coming in contact with a tooth, that to the eye may appear quite intact, but the pain indicates that a change has taken place in the organic structure of the tooth that induces a separation of its organic and inorganic elements, which modification renders the former sensitive and the latter an easy prey to the acid secretions of the mouth.

We need not, therefore, be much surprised if after a few months our patient returns to us for further treatment, complaining, probably, of pain when masticating, or if particles of food becoming wedged between the teeth, and as these are difficult to remove, they are allowed to remain until fermentation increases their irritating properties, and pain is felt, though usually not

severe. The tooth is not sore to touch, nor does it respond by unusual pain if cold be applied to its external surface; but allow the cold to be applied directly to the sensitive spot, then quite severe pain will follow. This would indicate superficial caries; but if the pain has been very severe and persistent, and recurring apparently without any exciting cause at intervals of some hours or days, we may expect more serious trouble—deep-seated caries, at least, if not pulp exposure, and in these cases it is often quite difficult to determine whether the pulp has been exposed or not.

The pain incident to an extensive exposure of dentine varies in degree with almost every individual case from those teeth which have never even given a feeling of discomfort to those which, upon the slightest provocation, or apparently without any provocation whatever, will give rise to the most violent paroxysms of pain.

What the peculiar conditions are that afford some of these cases immunity from suffering are not entirely clear. The irritability of the general nervous system has much to do with it, while the peculiar character of the teeth exerts a great influence. Those which are very hard, or have a large proportion of the inorganic elements, will not be found so sensitive as those in which the organic elements are at present in greater ratio. Hence the teeth of adults are not so sensitive as those of children. If the decay is slow, or if the vitality of the tooth be lost in advance of the decay of the inorganic elements, the sensitiveness will not be so great as would attend did the adverse condition prevail. An enumeration of all the agencies that conduce to this condition affords a good opportunity for research.

Deep-seated caries may often be ascertained by an intensified degree of the symptoms of the superficial caries, together with the absence of those which peculiarly designate an exposure of the pulp. Every practising dentist is well aware that the pulp may be, and often is, exposed without giving any warning of its condition, but in the great majority of cases when exposed, it has reached that degree of hyperæmia or inflammation which is its most abnormally sensitive condition. And we may expect such a condition if we are told that the patient has endured at irregular intervals a sense of undefined uneasiness in all the teeth of the affected side, more noticeable in the evening, and returning, perhaps, on successive evenings; that he has been awakened sometimes from a sound sleep, kept awake for an hour or two by throbbing pains in the tooth, then slept undisturbed for the rest of the night; that hot or cold water taken into the mouth is followed by severe pain which, perhaps, cannot be localized in a particular tooth, but seems to be on the surface of all the teeth; flashes of pain in the ear or the side of the face, or, perhaps, down the neck; in fact, a neuralgia which may be distinguished from the neuralgia of malarial or gouty origin, in that the paroxysms of the latter occur

more frequently in the mornings instead of the evenings, and are not induced by bringing heat or cold in contact with the teeth, as is the case when its origin is to be found in the dental pulp.

If there be uncertainty as to which tooth is affected, it may be definitely ascertained by isolating each tooth in succession with the rubber dam, and applying the cold test until the affected tooth is reached which will respond by very severe pain.

'Tis true that a pulp does sometimes become more or less hyperæmic even in a sound tooth, the pain being sharp and lancinating, paroxysmal in its character, especially in the earlier stages, but in the absence of a cavity it is not easy to mistake this for any other affection, and if the tooth be protected from excessive thermal changes for a day or two, with perhaps a little topical application to the gums, the trouble usually passes away without any serious complications.

Sometimes it may be ascertained whether a pulp be exposed or not by cleaning the cavity somewhat and plugging with cotton and gum sandarac. If the pulp be not exposed the pain will gradually subside, otherwise it will continue unabated.

Not unfrequently, I think, those cases which sometimes return to us paining severely after being filled, are due to their having been filled over an unexpected exposure of the pulp when we thought we were contending only with dentine of exalted sensibility.

The differentiation of apical pericementitis presents little difficulty if we remember that the peridental membrane is the organ of touch for the tooth. Pain on pressure, therefore, is a constant symptom that distinguishes pericementitis from hyperæmia or inflammation of the dental pulp.

In pericementitis pain is always referred definitely to the affected tooth. In pulpitis the patient is usually uncertain as to the exact location of the pain. Reflected pains are characteristic of pulp trouble. They are not present in pericementitis. The pulp, especially when diseased, is very sensitive to thermal changes. The peridental membrane is not. Swelling that is apparent is uniformly absent in affections of the dental pulp; while in diseases of the peridental membrane swelling is usually present either in slight degree or extensively. These symptoms are sufficiently antithetical to make it easy to decide as to which of these two organs is affected.

The indications of chronic apical pericementitis are similar to those of the acute variety, but in modified form. Pressure on the tooth causes pain which may be considerable or only sufficient to cause annoyance. This condition may remain stationary, or it may last two or three days, then disappear for a time. There is more or less congestion over the root of the affected tooth and no sensitiveness to thermal changes.

If the means employed for subduing the inflammation have

failed, or if the case be not seen until the formation of pus has began, all the symptoms will show aggravation.

The gums will become deeply congested or perhaps actually inflamed, and the lymphatics at the angle of the jaw are often sore and swollen. The pain in many instances becomes intolerable, and is of that throbbing, pulsing character that may be followed by rigor and high fever. After two or three days, or sometimes longer, the accumulated pus burrows through the bone and finds its way into the soft tissue where there is usually considerable swelling with a marked abatement of the intense pain. It continues, however, in a less intense form until the pus be discharged, when it subsides within a few hours, and the swelling within a day or two.

After the pus has been discharged from an acute abscess the inflammation subsides, and as far as the eye can detect the parts return to very nearly the natural condition, except that usually there remains a fistulous opening upon the gum, and now we will have a chronic alveolar abscess. Chronic alveolar abscess may also result without there having been any acute inflammation at any time. In fact, the patient may not remember that the tooth has ever been sore or that there ever was anything wrong with it. It may not even be decayed, but there is usually more or less discoloration, or if this be not perceptible, the particular tooth causing the trouble may be ascertained by the application of the cold test. This time the affected tooth will not give any response to cold while the healthy teeth on each side will be normally sensitive.

I do not consider it advisable to extend this paper so as to include the symptomatology of other affections of the oral cavity less frequently met with, nor do I submit the observations herein presented as at all exhaustive of this part of the subject, but if I have offered any suggestion, or if this paper is fortunate enough to induce a discussion that may suggest different methods of diagnosing these different affections, my object has been attained.

Bridge and Crown Work.

By H. WOODBURY, D.D.S., Halifax, N.S.

Perhaps no departure of mechanical dentistry for the last few years has attracted the attention of operators and patients as much as "Bridge and Crown Work." We will state briefly some of the reasons for the popularity of this kind of appliance:

First, it can be made very attractive. There is, with the majority of people, an innate love for the possession of gold in some form. It is found alike in the crude gold jewellery of the barbarian, and the more beautiful ornamentation of the person

among civilized nations. The patient, therefore, having this propensity, and the operator recognizing the fact, he is almost sure of a hearing in favor of this work. The argument would be something as follows: If there are natural teeth remaining in the mouth, a bridge can be secured to them without the necessity or possibility of removing it—and just here visions of loose plates and tooth-destroying clasps are made to pass before the unexperienced and anxious mind of the patient.

Are not the natural teeth a fixture? And here you have an artificial appliance equally secure. Again, no plate covering the roof of the mouth, and as the nerves of taste are popularly supposed to be in the roof of the mouth, this is a very important consideration. Again, the bridge can be cleansed as readily as the natural teeth, also the teeth can, in most cases, be made to imitate very closely in appearance the lost organs, with a generous display of gold crowns as well. But among the more important arguments is this: The work is so secure that mastication is as easy and successful as with the natural teeth.

About this stage the only consideration is a financial one, as such work must always of necessity be expensive. A natural question for the dentist to raise just here is, will this work stand the test of time and use? Is it destined to grow in favor with operator and patient? I have not seen any tabulated statistics of the permanent nature of the work, but it has been our lot to examine and repair, or, in very many cases, remove from the mouths of disappointed people work of this kind where they had received the assurance of the operator that their trouble was over in this respect, at least, for many years—this assurance, in many cases, from conscientious men and good operators. But we must believe that many such are caught in the popular current and overlook some very important anatomical obstacles to success in a large percentage of cases. For example, we will take a typical case, as follows: the loss of the second bicuspid and first molar, here we have only two teeth to replace. We will suppose the gold crowns on the first bicuspid and second molar to be accurately fitted and cemented in position, also that the connecting bridge is securely and strongly soldered to the same. The articulation or bite is all that can be desired for mastication. The question just here is, with all these favorable conditions is there any possibility for such an appliance to fail? We answer that we think there is, for the following anatomical reason: Let us remember that the relation between the alveolus and root of the tooth is that of a gomphosis joint, admitting, it is true, of but little motion, but nevertheless of motion. Now in mastication the patient bites, for example, on the crown of the first bicuspid, moving it laterally to some extent. We wish you to think of the connecting bridge as the handle of a wrench, the jaws of this wrench being the crown on the second molar.

The lateral movement of the bicuspid does not produce a lateral movement in the case of the molar, but a very distinct rotation. To our mind, here is the chief source of the failure. The tooth must rotate, the bridge must spring, or break, for the pressure of mastication is very considerable. Again, a number of teeth, say five or six, are to take the place of that many natural ones; instead of the five or six roots bearing the pressure, two are generally called upon to do the work, and inflammation often follows from their being over-taxed. In closing, we would not say that bridge work should not be practised, but that a very careful study of the individual case should be made and the obstacles to be overcome kept clearly in mind.

Dentistry as a Fine Art.

By DR. W. C. DELANEY, Halifax, N.S.

A great deal of time and attention has been given at conventions and in dental literature to what may be termed the abstract in dentistry, and no one who has kept pace with the reports of these conventions can but be gratified at the depth of research attained by the scientific men of the dental profession. The pioneers, with the late Dr. W. H. Atkinson at their head, have done for the present generation of dentists more than can be measured, and it might be well here to pay a tribute of respect to that one who, during the year, has passed away, leaving behind him a record of intelligent research and honest toil for the good of his brethren, as well as for those who come under their charge, whose name will ever, in the minds of those who have come in contact with him, be a synonym of broadness and courtesy. Many of these old standard-bearers have passed away since this Association met last year, and this and the coming generation of dentists will do themselves honor if they pursue their calling with the same diligence, making it honorable as well as useful. All honor to their names. The lives and teachings of these men have made it easy running for those who now come into the field, as the difficulties, to a very large extent, have been overcome. Still, the requirements of the man entering this domain are as many and varied as ever, as the demands are greater.

What constitutes a fine art? Is it not the brain power and delicate manipulative skill of the workmen? It has been said by some who are to be considered learned in medical lore, that to fill teeth well does not constitute a dentistry, and as to making teeth, that belongs to the mechanic. When it is considered that this is the occupation of some ninety or more out of every hundred of the dentists of the land, I think it must be a very important item in

dental knowledge. The field of the dentist is the oral cavity. His work is to keep in good condition that which is the gate-way to the whose system of life, and he who loves his work is never better pleased than when he takes hold of a mouth a very *cavus averni*; the teeth covered with sea weed, the gums festooned with patches of alternating blue and red—a pest-house for the breeding of all kinds of wiggle-tails—each the embodiment of nastiness—and brings it to a condition of health and beauty, to a very temple of Apollo, with its columns of ivory and gold; or if the equally important operation of substituting artificial dentures, his skill brings him on the plane of fine arts. No one who sees the many wearers of artificial teeth but can see the entire absence of the artistic—a simple mechanical appliance fulfilling its mission, it may be, as a grinding mill, but altogether wanting in what only genius can give it, a perfectly natural expression. Many people are utterly disfigured by the wearing of artificial teeth, though the variety of colors and shapes are counted by the hundred. The habit some dentists have of inserting teeth in mouths after extraction, as a permanent set, is not consistent; to say the least, with sound knowledge. The great mass of people can afford, and would be willing to wear, a temporary set of teeth for one and a half or two years before having a permanent set inserted, but this commercial spirit is about in the land and this is an avowed enemy to high art. The tin peddler should stay out of dentistry—a growing profession, based on the lives and teachings of those men I spoke of in the first part of my paper, has no place for such, and if our course is to be onward and upward, the sooner the colleges guard their doors from these the better.

Dental Dots Distilled.

By D. V. BEACOCK, Brockville, Ont.

Ethylate of sodium is good to use on hypertrophied gums, free from pain and danger even if used in excess.

Cocaine dissolved in chloroform, one grain to one-eighth ounce of chloroform, is good to extirpate pulps without pain.

Take a small-sized sewing needle; at the distance of, say, three-quarters of an inch from the point, bend into the form of an S, the point of the needle forming the long leg, useful in filling labial cavities under the gum; stick the point into the neck of the tooth below the rubber dam, just above the edge of the cavity, lift the upper edge of dam over the eye end of the needle, and the resiliency of the rubber will keep the needle in place and the cavity dry. It is far ahead of any clamp for the above purpose. To prevent the eye of the needle penetrating the dam, put a little bead of shellac on the end.

Editorial.

An Acknowledgment.

In our last issue the Publisher presented our subscribers with a supplement, containing the portraits of the executive officers of the World's Dental Congress, for which we were altogether indebted to the courtesy of the *Dental Tribune*, and its editor, Dr. Louis Ottofy. Our Chicago contemporary secured these at considerable expense of time and money, and kindly consented to the DOMINION DENTAL JOURNAL using them. It must have appeared very discourteous, that no acknowledgment was made of the source from whence we obtained the supplement, but it was due to the illness of the editor of this journal, and the fact that it was necessary to bring out the last number without his supervision. We now wish to emphasize our obligations to Dr. Ottofy and the *Tribune*.

Membership in the Congress.

We have been obliged, in accordance with the Code of Ethics, to refuse to sign one application for membership. Any man who has broken the code knows it, and may govern himself accordingly. Dr. A. O. Hunt writes us as follows: "Upon the presentation of the certificates of membership issued by the honorary officers of Canada to the Registration Committee (in Chicago), they will receive *at that time* their card of membership."

The Congress—A Last Word.

This journal is not to blame if Canadian dentistry is not well represented on the 14th of this month. There is no doubt that a great many imagine that August is a scorcher in Chicago, and that they can see the Fair later on. It ought not to be necessary to impress upon our confreres the practical advantage of taking in the Dental Congress first and the Fair afterwards, or enjoying them both at the same time. August in Chicago is by no means a scorcher. The Dental Congress will be an education such as all the colleges combined could not afford in the same time. There is plenty of reasonable hotel and other accommodation. Two can room together for fifty cents a day each. First-class rooms and accommodation can be had for \$1 to \$1.50 per day, when one wishes to room alone. One can manage quite economically, or live like a boodling politician.

WORLD'S COLUMBIAN EXPOSITION

- - - - CHICAGO, 1893.

Special Announcement

We respectfully invite the attention of those members of the Dental Profession visiting Chicago to our Exhibit of

MINERAL TEETH, DENTAL RUBBERS, AND FINE INSTRUMENTS,

At Stand 29, British Section, Manufacturers and Liberal Arts Building.

MINERAL TEETH

Flat, Vulcanite, Diatoric (pinless), and Tube.

OUR general stock comprises a most extensive assortment of all these kinds, which, in addition to natural forms of all sizes and shapes, colours ranging from very light to very dark, density, texture, strength, and freedom from porosity, also possess the following desirable qualities :

ADAPTABILITY.—Being of the same substance throughout, they can be ground and polished to any extent. This feature renders their adaptability unlimited, makes them particularly suitable for bridge-work, pivoting, etc., and enables the skilful operator to do anything he may desire to suit special cases.

FITNESS FOR SOLDERING.—Under the blow-pipe they bear in an extraordinary manner the sudden transitions of temperature to which they are subjected, without cracking.

REGISTERED TRADE MARK.

As an entirely different make being sold by some dealers in Teeth, we have stamped our registered trade mark on the back of all wax cards, so as to protect our



and inferior grade of teeth is now America under the title of English registered trade mark on the back of manufacture.

Illustrated Catalogue of Mineral Teeth sent post free on receipt of Professional Card.

CLAUDIUS ASH & SONS, LTD.,

6, 7, 8 & 9 Broad Street, Golden Square, . . . London, Eng.

New York Branch, 30 East Fourteenth Street.