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W. GEO. BEERS, L.D.S.,
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THE CANADA
Journal of Dental Science.

Vol. III.]

December, 1870.

[No. 2.]



ORIGINAL COMMUNICATIONS.

FATAL CASE OF CORROSIVE ULCER.

By CHARLES P. LENNOX, L.D.S., Chatham.

By the following report of a fatal case of corrosive ulcer, I wish to impress upon the minds of all practising dentists the fatal consequences which may attend an operation improperly done. In this case, however, the trouble originated from a bad fitting plate, but as like fatal results may, and do follow other dental operations, our duty lies in effectually accomplishing all we undertake professionally.

Three weeks ago I was requested to visit a lady suffering with alveolar abscess. I found her in great pain with it, face much swollen. The flesh was sloughing off from the alveolar ridge and roof of the mouth, so as to leave bare the bone from the centre of the hard palate to the external side of the affected alveolar process; pulse one hundred and fifty; two natural teeth extracted easily with the fingers, showed no decay of the crowns.

About ten years ago while in California, a partial denture on rubber plate had been fitted to her mouth, which, in consequence of not fitting properly in the region of the natural teeth above mentioned, kept up a constant inflammation of the mucous membrane, causing the gums to recede from the necks and roots of the teeth, and finally ulceration at the roots. Three years ago she called at my office to ask some questions regarding the case, but had nothing done, promising to call again. She retired to her bed about four weeks ago with severe pain in the side of the face, intending to visit the dentist the following day, but was confined to her room until her death, which occurred in less than two weeks, subsequent mortification having taken place. She was under the treatment of Dr. Flemming of this place, by whom I was requested to see her.

ALUMINUM AS A BASE FOR ARTIFICIAL DENTURES.

By G. V. N. RELYEA, L.D.S., Belleville.

Having frequent communications from dentists in relation to the aluminum work, (as to my opinion and *modus operandi*), and having had some considerable experience in that line, I purpose in a very brief way to give my system of mounting, and my reasons why I consider aluminum preferable to rubber, gold, or even continuous gum work. It must not be supposed, however, that I have any thing new to introduce; on the contrary it is the old system of swedging and then attaching the teeth with vulcanite. The clasps can be attached in the same way. I may say, however, that I never perforate, but simply serrate, as it does not weaken the plate, and the rubber does not show on the under side.

Aluminum is better than rubber because it is stronger and can be made as thin as gold. It is preferable to gold, for the following reasons: First, there is less labor in putting up a set; second, there is no danger of the plate warping, which it will do more or less in all cases when all gold is used; third, it can more readily be kept clean; fourth, it is smoother to the tongue. Continuous gum work is unquestionably the most beautiful style of artificial denture, ever made, but it is unavoidably heavy; there is the same danger of warping as in gold work, it is more readily broken should it drop and infinitely more trouble in repairing.

Whatever merit rose pearl, or more properly Pyroxyline, may possess it is in its present state too tedious, complicated and uncertain for general use. Finally, there is unquestionably nothing hitherto used that will give a better fit than the odious rubber, but in this particular feature combined with its exceeding cheapness centres its whole merit. I do not use aluminum exclusively, nor to any very great extent, but where strength is required I find it the best and most reliable adjunct that has yet come into my way.

FINGER PROTECTOR FOR USE IN ANÆSTHETICS.

By J. LAUDER, Dental Student.



This little contrivance suggested itself to me, as a useful finger protector and assistant during the administration of anæsthetics, when there is so much muscular resistance of the lower maxillary that great difficulty is found in depressing it to make room for the forceps.

The ring is made of silver, to fit the forefinger of the left hand, half an inch in length from the tip of the finger; a lip is added to prevent slipping. It may be used by the operator or assistant. It affords great

strength to the finger to depress the jaw, and protects it from a bite. If the patient should grip your ring, and you wish to withdraw it, simply turn it so as to bring the lip to one side, when it may be withdrawn "in spite of the teeth."

A FEW THOUGHTS ON AMALGAM.

By CHAS. HARDING, London. Eng.

Of late years there has been so much improvement in the manufacture of amalgams for filling teeth, that they have become more popular in cases where gold cannot be used to advantage, and the most eminent practitioners in all parts of Europe use amalgam for their best as well as poorest patients. I do not refer, of course, to those impure and filthily prepared combinations which earned for any amalgam, however good, the unreasonable opposition some years ago in the United States. There is as much difference between a properly prepared amalgam and these dirty preparations, as there is between pure gold foil and gold foil adulterated with lead, and, while believing that we should always use gold when we can, the practice of respectable dentists, for twenty-five years, will bear witness to the usefulness of amalgam, when a soft plug is required. In this connection I might say, that in judging of amalgam, it is erroneous and unfair to do so by the work of quacks. Let us take its history under the manipulation of honest men, the only fair way to judge any material for filling teeth.

The charge of "salivation" from amalgam is held in Europe as mere assumption, and I would advise looking beyond it, in diagnosis where amalgam is present in the teeth. Recently I had a patient, aged 29, who came to me, and accused amalgam, I had inserted three years before, as the cause of ptyalism presented. "My dear friend," I said, "tell me how long is it since you were treated for syphilis, and what quantity of mercury did you swallow." That person collapsed.

One point strikes me of importance in securing a clean face to amalgam, and smoothness of surface at the edges of the cavity. In the first place, the edges should be as carefully smoothed as if gold is to be used, and the entire preparation of the cavity done as thoroughly as possible. The cavity should be carefully dried and kept so during the plugging; the silver and tin should be ground fine in a mortar after being filed, and washed in salt and water, and dried, then washed again in alcohol and dried in the sun; the mercury should have no sediment. I always purify mine by distillation of the red oxide. The amalgam should be made in a small mortar, and after being well rubbed together, the excess of mercury should be squeezed out,

and the preparation washed several times in salt and water with the pestle and the finger, and washed again with alcohol; then squeeze out as much more mercury as possible in a chamois, with flat pliers, and cut into small cakes to use. After the filling is in, rub its surface hard with a burnisher, and then finish by drawing a dry mouth napkin across its face, in one direction; if the mercury is well squeezed out, the surface of the filling will present a clean frosty appearance; and if the materials are pure and have been thoroughly washed, it will keep comparatively clean in almost any mouth. Her Majesty the Queen has had teeth filled with amalgam, by her state dentist. I do not mention this to prove that amalgam should always be used, but to prove that it can be used where gold cannot, and that if it is ever good in the case of a patient who can afford to pay for gold, surely it is a blessing to those who are poor.

ANNUAL ADDRESS DELIVERED BEFORE THE QUEBEC DENTAL SOCIETY.

BY W GEORGE BEERS, L.D.S.

MR. PRESIDENT AND GENTLEMEN,—An address, or an essay, without an apology on such an occasion as the present, would be much like a book without a preface,—both having become so customary; but as my excuse is not for neglecting the duty appointed to me in preparing the annual address, but an apology for not doing it well, because of personal inability and lack of time—having been compelled to defer it until the eleventh hour—and fully realizing the difficulty of the position, I trust you will extend to me your most lenient consideration.

I think we have good reason to regret that this first annual address was not assigned to one older, who could better have taken us back to the early history of dentistry in Canada, and traced its progress down to the present time in all its various stages. It would be a matter of deep interest, and more than local interest, to know something more of the early practitioners, their manner of working, and the facilities they possessed. Small as the sphere was for dentistry in Canada a quarter of a century ago, there were a few men whose names are known beyond our borders for their contributions to dental science, and much of whose work we find existing intact to-day in all its excellence and honesty. Spooner, as the discoverer of arsenic for destroying the dental pulp, was a Montrealer; and while the more conservative principles of the present succeed in saving hundreds of pulps which formerly were ruthlessly destroyed, the discoverer of arsenic served his generation, and has left his "foot-

prints on the sands of time." Logan and Rahn, of Toronto, won high reputation for the excellence of their operations, and both were induced to go to England, where they amassed large fortunes, and rose to eminence in their profession. W. H. Elliott, of Montreal, had no superior on the continent as an operator and a gentleman of high mechanical and literary abilities, as his contributions to American Dental journals bear witness, and the great number of his inventions and improvements. I regret that I am not able to speak of the old practitioners of Ontario: and in this place I cannot omit to pass over the names of Dr. Bernard, the oldest living practitioner in Canada, and who is still in harness vigorous as ever; Drs. Baillargeon and McKee, of Quebec,—the latter of whom was the first Canadian dental graduate, and Dr. Webster, of Montreal, who was the first man in this country to administer ether and then chloroform. I reiterate my regret that I am unable to do justice to this subject, and trust that Dr. Bernard will favor the society some day with a history of his early contemporaries.

Long after the profession in the United States had emerged from the selfishness of its dark ages, dentistry in Canada continued to lag along in the old style; pupils were indentured in a solemn formality enough to make an armadillo quake; and, in some instances, the innocent student was bound over not to open an office on his own account within a hundred miles of his preceptor, nor to reveal to rival dentists the "secrets" he might learn in laboratory and office. Receipt books—then more valuable than now, because of the secrets which had to be purchased, and the illiberal feeling existent—had locks, and well typified the narrow-mindedness of the early times. Ways of working were more important secrets than one's bank account, and the personification of repulsiveness was to be met when one ventured to advocate co-operation, association and reform. A miserable exclusiveness pervaded the mind of practitioners, and some few who made attempts to bring about a better state of affairs met with discouragement and opposition. No doubt the idea of legislating was often discussed in conversation, and everything *we* have done was probably anticipated by our predecessors who lie under the sod; but what was desirable was not possible, and the early history of our profession showed no prospects of change;—a history which, we trust, will never repeat itself in our Dominion. In 1842, however, Dr. Bernard did put forth an effort, almost simultaneous with the passage of a law in Alabama recognizing dentistry as a profession and regulating its practice. At that time a medical bill was before the Legislature, and Dr. Bernard endeavored to have a clause inserted in it to regulate dental practice. Nothing else was done towards legislation and association, until the noble efforts

made by our friends of Ontario, when with hard fighting and commendable zeal, they organised an association, obtained an act of incorporation, and won for dentistry the legal right to be called a profession. Ontario and Quebec now possess laws which mutually protect the public and the profession; and let us trust that the local legislatures of our sister Provinces will at once awaken to a sense of the great need and importance of incorporating the dental profession of their Provinces, and so extending the advantages we, in common with our community at large, enjoy.

It has become an intelligent principle to measure the standing of every art and science by its growth with the times. Geology has outgrown the guesswork of Pythagoras, and newly discovered "sermons in stones" illustrate the history and development of the globe, and testify to the truth of scripture. Any schoolboy of the present day may intelligently ridicule the superstition which clung to astronomy in the time of Copernicus; briefless barristers may pool-pool much of Lyeurgus; first year medical students may sneer at the vagaries and therapeutics of Celsus; dental pupils pity the pulp-slaughtering practice of Spooner, and even criticise the largest part of the early editions of Harris. An infallible law exists with regard to all science and art, which, like that of the mutation of races and tongues, preserves the true or removes the imperfect, according to their development. As in the animal kingdom, genera and families disappear after having fulfilled their time, and become transmuted and further developed in others called more perfect, so through a series of progressive developments, an imperfect principle in science is the forerunner of one of perfection and truth, and scarcely leaves a vestige by which we can detect its origin. Old speculations and practices which once were revered, are thrown away like the key of Garengcoot and the invariable principle of extraction in chronic alveolar abscess; the text books of Maury, Jourdain, Hunter, Bell and Harris, are no reliable guides, and many names once honored as almost inspired, are now recalled with more curiosity than awe.

One is naturally disposed to magnify the importance of any occupation in which he is engaged; and it seems to me, that if there is an exaggeration which should be excused, if not commended, it is that of the man who over-estimates the value of his own profession, and who, therefore, esteems it paramount to all others. To think highly of one's self is not at all identical with thinking highly of one's labor—indeed there is nothing more diverse: and I conceive that the growth of dentistry and its present position as a recognized branch of medicine and yet an independent and distinct profession, entitles us to have its claim respected. Take it theoretically and practically in all its constituted

branches, operative, mechanical and surgical, since the time of Hunter, or even Harris; look at the advancement in the diagnosis and treatment of certain diseases of the teeth once deemed incurable; the progress in difficult operations on the teeth; the application of delicate and complicated apparatus for cleft palate, fractures of the jaws, &c., which once was hardly within the sphere of the dentist at all. Look, too, at the catalogues of our manufacturers; the improvements made in instruments; and were it possible to resuscitate the early dentists and lead them through the dental depots, would they not have good cause to regret that they had been born so soon, or progress had commenced so late.

Not only have invaluable discoveries been made by members of our profession in the natural laws which govern the various phenomena of absorption and reproduction, the physiology and pathology of the teeth and their adjacent structures; but enough has been done in the operative and surgical within the last twenty years to distinguish dentistry as a scientific profession, needing for its faithful practice a high degree of medical and mechanical tact and knowledge.

We have hardly yet begun to realize the personal, professional and public advantages accruing from the improved state of affairs in the Canadian profession. Personally, every dentist who chooses to respect himself, holds a position in society as a professional man,—a position he could not legally claim and which was not generally recognized before the passage of our Act of Incorporation. The privileges granted to physicians with respect to their accounts have been extended to us, while before the passage of the Act, we had to swear to our work and cost of material, like a mason or plumber. Before the passage of the Act we had no protection from the raids of nomadic empyrics: to-day they are completely shut out. We have also this organization, and other educational advantages, which reflect credit on the profession, and benefit every individual who chooses to avail himself of their inducements. Dentistry is no longer regarded as a trade, and education is no more confined to the laboratory. The character of the profession is raised by the better education of students, the existence of an examining board, and a license to spur ambition and stimulate study. By compelling our members not to take students for less than three years, the manufacture of dentists in as many months has been stopped, and the education in the office is more thorough.

The influence of these societies is also irresistible, centralizing professional experience and action, dissipating errors of practice, blending sympathies, and stimulating to earnest study, to observation and experiment. Pre-eminent above most direct influences is that of association,

where every one is a worker to the best of his ability. It is not at all rare to meet excellent operators who are not ashamed to confess, that they had practised for over twenty and thirty years, and had never known as much about filling teeth, as they learned from a few clinics and discussions in such a society as this. Books only go a certain length. In a discussion or at a clinic, we see *demonstrated* principles which are never half learned by reading; we have no excuse for misunderstanding a knotty point which a question may settle. And here, let me urge the need for clinics. They are indispensably necessary to compare our different methods of practice effectually, and as important as bed-side lessons to the medical student. Not only in filling, but in diagnosis of diseases having relation to the teeth and adjacent structures. A natural sensitiveness exists among many—the fear of being thought ignorant of some points of our profession. This should be put away, and each one feel that he is here on the scent for knowledge; that our interests are identical, and that while agreeing to disagree when we conscientiously believe our different methods to be the true, that we will not let our shades of difference lead us to dogmatism, but that we are willing and anxious to let them be tested and moulded by the touch of truth and philosophy. If we are at all sincere in the progressive movements in Canadian dentistry, it is impossible to be misers of our talents, or to be ignorant of the best means for giving our knowledge to our *confrères*. The sooner poor operators become good, and quacks reform, the sooner will dentistry command more general respect, and cheap dentistry, show cases and boasting advertisements go to the wall. Our profession in this country will become just what we make it. It is our prerogative and duty to foster its dignity and honor, and so to weed it of everything disreputable, that in our “sere and yellow” we will have reason to be proud of the retrospect, and that those who come after us—possibly our sons—may have cause to feel grateful for our labors.

There is one point I would like to touch upon, but very briefly; that is, the education of students in the office. With the present opportunities for education, no one who can, should miss attending a dental college; but the education of students in the office—and some cannot manage to attend a college—should be much more thorough in the operating department. It is a reproach that some of us should have to say “I never saw my preceptor fill a cavity, nor was I ever shown how to prepare cavities or diagnose disease.” I would also draw attention to the necessity for continued self-study and reading. No intelligent man dare despise the importance of quiet study. The cost of a cultivated and highly educated professional man is immeasurably greater than mere

money can obtain. It is the purchase of long hours and years of reading and reflection, theory and practice.

The importance of anatomy is evident, that we may understand the structure and formation of the body we treat; physiology, that we may understand the natural functions and duties of each part, their origin and development; pathology and therapeutics, that we may recognize the departures from the normal condition and the remedies to be used; chemistry, mechanics, and, indeed, even the collateral sciences. The more conservative dentistry is made, the closer must it be allied to medicine.

You are aware of the suspicion and slander cast upon our early efforts by a few men in our ranks, and echoed by a portion of the Montreal press. Nothing was too bad to be said of our Society and the Board of Examiners. We were told that we had carried reform to the verge of tyranny, and were combined against liberty and justice. But what is the result to-day? Did our act do anything for us that it did not do for those who opposed or ignored it? Does the Board of Examiners and this organization do no good for society in diffusing dental knowledge, in improving practice, and elevating the condition of an important profession of which the public could not well do without? And may I ask those few who accuse us of selfish motives in organizing the society, what personal interests can any one of us here serve by coming to these meetings, and revealing any good method of practice we think we possess. If selfish motives influenced us, we would better serve them, by refusing to attend here, and by following in the steps of our fathers.

With respect to the great bug-bear, quackery, time will, I am sure, rid the profession of much of the sham and imposition practised by some calling themselves dentists; but we have the remedy in our own hands, and that is, to educate the public. The task of reform in dental practice devolves upon us; and our opportunity is afforded in our surgeries, in our work, and in our press. Quacks will exist just as surely as weeds will grow, but neither quacks nor weeds should be spared. Unless the practical plan of Alphonso of Castile for regenerating mankind—to kill nine out of every ten—were adopted with empirics, they will be found, and our best remedy is to cultivate a public sentiment opposed to show cases, glaring signs and advertisements, and to educate the people to judge of a respectable Dentist as they would of a physician,—and we know our leading physicians,—the men who are to be trusted, do not hang out catch-penny sign-boards, or rival a Barnum in the humbug of their advertisements. Let us make the profession respectable. It can never be truly scientific and not respectable. A dentist who acts against this

principle is an enemy to the profession: his honour is in his pocket and his reputation will not survive.

And now, gentlemen, I must bring this paper to a close, trusting that each one of us will endeavour to uphold the conservative character and respectability of the profession. Let us have a higher conception of it than as a mere means of sustenance; let us have our ideal of excellence far beyond, to what, perhaps we can attain; being more afraid to teach than to learn, and guiding our practice by the thought from the old Chinese philosopher Confucius, "What you know, to know that you know it, and what you do not know, to allow that you do not know it, that is knowledge."

Thanking you for the attention you have paid to my very imperfect and hastily written paper, I only trust that I have, at least, not quite wasted your time.

A LITTLE HINT.

BY W. G. B.

Several times I have been vexed with an upset of my bottle of carbolic acid, and as I use it a great deal, preparatory to putting in the gold in sensitive cavities, &c. I always have it at hand. To prevent unpleasant results from upsets, I now simply fill a small wide-mouthed bottle with cotton wool, and pour in sufficient creasote or carbolic acid to be absorbed by the wool. There will be more than enough to wet a pledget on the point of an instrument, and not enough to be spilled in case of an upset. I think I got the idea from Professor Atkinson.

PROCEEDINGS OF DENTAL SOCIETIES.

QUEBEC DENTAL SOCIETY.

A regular meeting of the above society was held in Quebec city on the evening of November 8. Dr. Webster in the chair.

The annual address, as appointed, was then read and asked for publication. After which, the election of officers took place,—the elective officers of the Board requesting to be relieved from active office while holding positions on the Board.

President—H. D. Ross, Quebec. First Vice-President—J. H. Webster, Montreal. Second Vice-President—E. Lefavre, St. Johns. Secretary—W. H. Jackson, Quebec. Treasurer—Dr. Baillargeon,

Quebec. Executive Committee—Alloway, Powlin, Fiske, Leblanc, Nichols, Venner and Matthieu.

A "discussion" then took place on "Professional fees"; but, as it was so excursive and conversational, we cannot attempt to do anything like justice to most of the speakers.

W. G. BEERS said he considered the subject of importance to the profession, with a view to obtain uniformity if possible. He considered good dentistry very badly paid in Canada; and that "cheap dentists" were overpaid, because people cannot "buy five dollars worth for one dollar" and not run the risk of being cheated. If we consider dentistry a mere trade, then let us agree to work for as little over cost as the shoemaker who makes our boots; but if a profession, let us charge for our brains, our previous and continued study, and the sacrifices of comfort and health itself we are forced to make for the convenience of our patients. He did not believe in extortion, of course, and thought that the fabulous prices obtained in some parts of the United States by some operators were out of all reason; but we are fairly entitled to better prices than we now receive. He would propose a provincial fee bill, similar to that adopted by the medical and legal professions.

C. BREWSTER held the opinion that the best class of work was the worst paid, because it is the work of skill and study, while cheap dentistry invariably is done by incompetent men. A dentist might prepare and fill the same cavity with gold in ten minutes, as some do, or in an hour and a-half as others do, and the patient, in many cases, might know no difference in the quality of the operation. He did not believe that cheap dentistry would have a much longer lease, as people are being educated up to a higher appreciation of the profession. He always made his charges just as he pleased, and was not at all persuaded to depart from them, by any consideration of what others charged. He approved of a provincial fee bill. Thought it would educate the public up to our prices.

H. D. ROSS considered that we should not stipulate before hand as to prices; but that when an operation is finished, the charge should be made according to the time occupied and the difficulty of the operation. Low rates of charges are always associated with inferior talent and inferior work.

W. R. PATTON was strongly in favor of raising our prices. For a filling done in Canada just as good as in the United States, well-off Canadians will grumble at \$2.50 where a "Yankee" pays \$10 and \$25, because the latter appreciates his teeth better than Canadians, and would no more think of having a tooth extracted because it is decayed, than a finger cut off because of a whitlow. Thought there should be a provincial fee bill.

E. LEFAIVRE was in favor of regulating the fees, but it was impossible to adapt those of the city to the country. When he first opened business where he now is, travelling dentists had been charging less than one dollar for gold fillings—often fifty cents!—and anything they could get for artificial teeth. He found it difficult then to induce his patients to pay him one dollar and a-half for small gold fillings. He had found the printed fee bill of the Montreal dentists of great use to him. When any of his patients threatened to go to Montreal to get their work done, he showed them the bill, and said “Look what you’ll have to pay in Montreal.” A great many Canadian farmers and others near the border lines, go to the United States to get artificial teeth, and generally are swindled by travelling quacks.

J. H. WEBSTER thought a provincial fee bill, sanctioned by this society, would be more likely to be observed and respected than one got up among the dentists of one city. He would not advocate going below two dollars for small gold fillings. In mechanical dentistry, would charge according to the circumstances of the patient. He never found any benefit from doing work cheap. It was just such work that gave the most trouble. The Canadian people have been all along getting their dental attendance so low compared to the United States and England, that they thought dentists should not advance their fees, while every other profession and every branch of trade have raised their prices with the increase in the cost of living.

W. B. MCGOWAN said he found it impossible to get respectable prices in the country, and that people living some distance from his office would not come a second and third time to have teeth filled. He was compelled to do work lower than he deemed fair pay, or not work at all.

W. H. JACKSON favored the proposed fee bill. It was only natural that we should not care to labor for next to nothing, and also that a fair fee would induce the operator to aim at greater excellence. It was important to educate patients to understand the difference between the operation of a good, and a quack dentist. If they properly understood this, they would hesitate about patronizing “cheap dentists.”

R. A. ALLOWAY found the Montreal fee bill very useful, and believed it could easily be extended to other parts of the Province. It would no doubt be difficult at first, but time would bring the profession the justice in this respect it deserved. A provincial fee bill would have more weight than a local bill.

T. A. VENNER did not believe every one would adhere to the proposed bill. Among the French Canadians, two dollars can seldom be obtained for a gold filling.

W. G. BEEES blamed some of the French Canadians dentists of the cities for cutting down the fees. The leading French Canadians admitted this. These dentists did bad work for low prices, and, worse than all they degraded the profession by extracting hundreds of teeth which could be filled, for the purpose of inserting artificial substitutes. We do not charge for *advice*, as a general thing. We should do so, because we often gave advice of as much value to the patient as an operation. When there is occasion to be cheap, and work for half value, there is occasion to be charitable, and to do it for nothing.

H. D. ROSS thought a fee bill would stop a good deal of shopping. We should feel that in regulating the fees, we are not only doing justice to ourselves, but raising our profession above the trade level to which cheap dentistry tends to lower it. No man who has properly studied his profession will be inclined to do cheap work.

After some further discussion, it was understood that the dentists of the several cities and towns should draft a fee bill to which they know they can adhere, and that the matter of a provincial bill should be settled at the next meeting.

"*Mechanical Dentistry.*"—Owing to the lateness of the hour the discussion was necessarily very short, and only got as far as "taking impressions."

J. H. WEBSTER described his manner of taking impressions: used plaster. To displace an impression he passes a small instrument through a hole in the centre of the cup.

R. A. ALLOWAY uses a quill passed through a hole in the cup, to displace impressions. Takes impressions in wax, and frequently in wax and plaster. With plaster he places the forefinger of the left hand in the centre of the cup, and while pressing upwards, taps the handle gently to equalize the flow of the plaster and to adapt it better.

E. LEFAIVRE does not believe that there is any appreciable expansion of plaster in setting. Uses solution of castile soap to varnish plaster impression.

W. H. JACKSON uses wax and plaster for impressions for full sets; taking wax first, trimming off, and pouring in plaster on the wax. Where there are teeth uses plaster only, because if an impression is taken in wax, and plaster poured into the wax, it cannot be removed without more troublesome breaking of the plaster.

H. D. ROSS uses wax, taking out first impression and trimming off surplus, and after touching the sides with oil to prevent it adhering at these points, he puts it in again, spreading it laterally, then pours in plaster. To displace it, makes patient cough.

W. R. PATTON uses plaster altogether; does not think plaster expands when dry. There is more trouble with wax than plaster for impressions.

W. G. BEERS uses both wax and plaster. Where the teeth are fan-shaped, narrower at the necks than crowns, and the impression must inevitably draw if of wax, or be difficult to displace if plaster, has narrow strips of tough wax which he adapts around the necks, making the sides perpendicular, and trimming off flush. Before taking the impression he always oils these teeth and the wax around them, and then trims off easily on the model. Sometimes he has oiled the whole surface of the wax in the cup just before putting it in the mouth. Prefers plaster for the majority of cases.

W. B. MCGOWAN begged to divert from the subject of impressions to refer to a new idea now used, viz., making the entire palatine surface of soft rubber, or using a flexible rim around the edges of both upper and lower plates. He believed it was patented in the United States. He had seen several sets made in this way.

[N. B.—We hope to be able to publish this “secret” soon.]

BOARD OF TRUSTEES AND EXAMINERS OF THE DENTAL ASSOCIATION OF QUEBEC.

A regular meeting of the above corporation was held in the city of Quebec, on the 8th and 9th of last month. The following members were present:—Drs. Baillargeon, McKee, Ross, Webster, Brewster, Lefavre and Beers; Dr. Bernard, the President, being unavoidably detained in Montreal, by urgent business in connection with municipal matters of the greatest importance to his constituents.

Dr. Baillargeon occupied the chair.

Minutes of former meeting were read and confirmed.

Applications for licenses were read from Messrs. De Martigny, of Varennes, and McGowan, of Frelighsburgh, both of whom were received for examination in Dental Anatomy, Physiology, Chemistry, Surgery, Pathology, Filling Teeth, Mechanical Dentistry, Irregularities and Anomalies, Anæsthetics and Hygiene.

Report of Treasurer was read: Messrs. Brewster, Webster and Beers appointed auditors.

The report of Secretary was read.

The following resolution was passed:—

“That after the 1st of January next, all parties practising Dentistry in this Province without license, be prosecuted.”

A notice of motion was given to reduce the price of license to \$20 for those dentists now practising in this province, who are graduates of recognized dental colleges.

The candidates were examined to-day exclusively in writing.

November 9.

The verbal examination was held this morning; and the two candidates were unanimously granted the license of the board. Dr. Baillargeon, in presenting the parchments, took occasion to address each candidate, giving them some very appropriate and useful advice, and urging them to uphold the honor of the profession, by improving themselves in every possible way, and always esteeming the license they had obtained.

After the discussion of some miscellaneous business, and a decision to hold the next meeting in Montreal, in May, 1871, the meeting adjourned.

EPITOME OF THE PROCEEDINGS OF FOREIGN SOCIETIES.

[Continued from page 22.]

AMERICAN DENTAL ASSOCIATION, AUG. 4, 1870.— Prof. Knapp read a paper on "Cylinder—the method of making and using them."

He recommended the operator to provide himself, for making cylinders, with a desk having a velvet top, a box divided into small compartments for holding different sizes of cylinders, an ivory paper folder, a Swiss broach, upon which to roll the gold, the end being broken off and sharpened, and a pair of foil shears.

He had used many numbers of gold, from 2 to 36, but preferred Nos. 4, 5 and 6. When very large and long cylinders are needed, an entire sheet of No. 4 may be used; but for smaller, the sheet is cut into strips before folding.

To fold into strips or tapes, he first lays the piece of gold of the size required upon the velvet-covered top of an ordinary writing desk, and then indents with the edge of the paper-folder, and folds gently. The tape is then placed on the inside of the forefinger of the left hand, the hand being turned with the palm up, and the end of the strip almost to the end of the finger. The broach is taken up by the right hand and laid upon this end of the tape, and the gold rolled upon it by closing down the thumb of the left hand and drawing it backward toward the first joint of the forefinger. The rolling of the cylinder is completed by twisting the broach, thus once started, with the thumb and forefinger of the right hand. For very short cylinders, the tapes may be made by folding the sheet of gold and then cutting into very narrow strips

with the foil shears. When the rolling of the cylinder has been completed, a few more turns may be given with the nail of the left thumb pressed against one end of the cylinder.

Some cylinders may be made larger at one end than the other, by folding the tape so that one of the sides is the thicker. For filling pulp canals, the breadth of the tape is made almost equal to the length of the canal, and one end is folded to within a short distance of the other; then the end which has been made by the doubling is carried nearly to the end first folded down. This doubling up of one end is continued until the length of the canal to be filled is obtained and the gold presents a series of slight steps, the first being the thickness of the tape, the second double, the third quadruple, the fourth eight times, and so on, duplicating. The broach is then put on at right angles to these folds, and the whole is rolled into a tapering horn with the smooth sheet of tape outside and the doubled steps inside.

The method of filling consists in closing up the crevices by small cylinders stood on end, and then arranging others parallel with these around the walls, so that the ends project out about one-third of the whole length of the cylinder. They are flattened and partly condensed against the walls by lateral pressure. Others are then placed around within these and similarly worked. The largest are rolled soft and used first, while the small hard ones are for finishing, keying all together in the small holes pierced by longitudinal pressure on the cylinders with wedge-pointed instruments. He found that he must have instruments with points to go over and over again every part of the cavity. Where a cavity is irregular, he tries to make it simple. On the approximal surfaces of bicuspid he can get the best filling with cylinders, but where there are irregular walls he uses soft foil or adhesive gold and mallets.

Prof. BOGUE said: Under the head of Operative Dentistry we may consider some points—how our operations may be made neater by keeping our fingers and nails clean, by avoiding the use of them in our hair, etc., napkins should be kept in order, instruments clean and polished. It is not to be doubted that cylinders will make a most perfect filling in many cases, and the microscope will demonstrate that. There are, however, some cases where crystal foil or gold is needed. *Teeth must be filled with judgment as well as gold.* He would no more abandon cylinder fillings than rubber dam. We must use all kinds, as the case requires.

Dr. MILLS. It was an important matter that we should pursue our practice without prejudice, and simply for truth. We should spend more time, and examine closer into the preparation of the cavity for filling. He would as soon think of abandoning the rubber dam as to attempt to

fill with cylinders, but has been much pleased with the views advanced. He thought much could be learned from simple cavities. The principles underlying filling must be studied, and difficult cavities reduced to simple ones. He has been trying to reduce the number of instruments as much as possible. He has used many to learn, and he thinks here is another governing principle. He has come down to a few, which he finds valuable. Varney has presented thirteen; he takes out about four and gets along just as well as he did with all. His nervous temperament makes him try many; as to the form of cavities,—the walls almost perpendicular.

Dr. CORYDON PALMER. He desired to show how everything pertaining to the mouth may be made use of in practice. Every fissure in a tooth filled should be marked and the charge made immediately after the patient has been under the hands of the operator; they are both better able to judge of the amount of force expended, etc. He divided the mouth into four divisions.

First, he exhibited a drawing of a head divided into four by a perpendicular and transverse line; this gave an upper and lower right and left division. In making a record it is well to know how to note this,—L. Sup., L. Inf., R. Sup., R. Inf. divisions.

Second drawing gave the teeth, thirty-two in number. Commencing at central incisor, he numbers backward to eight; in this way he has the teeth of the four divisions described by numbers; thus, the lateral incisor is No. 2, cuspid 3, and so on to wisdom tooth, No. 8. The teeth thus become better known by their numbers than by their names. By the shape of the mark made he knows the kind of filling, and the position on the tooth by its relative position on the number designating the tooth.

Almost every dentist has some sort of short-hand or way of abbreviating a description of the operation. The time to make these marks or memoranda is immediately after completing the operation. Demonstrations then followed. He said that he was sorry to see so much time wasted in making pellets, cylinders, etc. They are filled with animal matter from the hands; while pressing and squeezing them in, spring the cavity in the tooth, and cause a constant antagonism between the attempt of the filling to escape and the tooth to retain it. Since 1860 it has been demonstrated by our prophet that a tooth can be built up, with all its cusps and fissures; yet there are some who will yet crowd gold into a cavity. No first-class operations can be made if the gold is handled, with the fingers. In using soft foil, it don't make so much difference how you fill, so long as you can put it off; but in ten years or so take it out and it is offensive, and the animal matter in it will burn.

You need not fear cutting down crown surfaces or fissures, for with adhesive gold this may all be replaced. Make the cavity thoroughly open, and put a mat upon the bottom; then build up, packing toward the walls. This is first class, and anything short of it is short of the highest attainment in our science. It has been stated here to-day that the cylinders make the most perfect and solid fillings. It is not true,—they will not do. Begin and build up solid from the bottom. Do not object to the heavy foils, but with No. 4, if you have proper instruments and operate correctly, you will obtain good results.

You must understand how to have your instruments right, and encourage our manufacturers. What is one or two dollars for an instrument? The difference of a line will make an instrument unfit for use. Just pay them to put the talent in it; have the serrations fine. It is most essential to have a fine point. Don't put the instrument on with a nervous force or jerk, but steadily, and press it down, holding it tight; then with the lead mallet strike a following blow, and let it not spring off; this vibration is what hurts the tooth. You strike with a steel mallet, or wood, or bone, etc., and bounce it off, but with the lead you hold the instrument until after the blow dies away.

In a recent case of atrophy with ridges and pits, I used the rubber dam and immediate wedging; had an 8-oz. mallet and very light instrument. The instrument should be in length in proportion to its size, and all according to what you may wish to do. With regard to mallets, I have a band of iron made, united with hard solder, and run the lead into it for a head. The making of the gold foil is confined to the manufacturer. We know there is a difference between adhesive and soft foil. I want that with a beautiful, bright, metallic surface. One-third of the value of gold is destroyed by pressing it in a screw-press, leaving the mark of the paper upon it. To use it I cut the foil, let it fall upon a napkin and roll it up with that. This roll is cut in pieces or attached at one end, and then built around. For annealing, the tube of the lamp should be made of platina or glass, so as to have a flame free from oxides. Be careful of the match, as the phosphorus may injure the gold.

I will describe how I filled a left superior lateral incisor, where one-fourth of the labial wall was cut away to get at the cavity. Get a perfectly smooth and straight labial wall; do not bevel it at all. This is done to have it strong. It may be started with a small chisel,—let it be strong and sharp. Then use a file to prepare the edges; get margin or edges all right; proceed until the cavity is fully prepared; with a fine drill, make a small retaining-point, or make little grooves. It is astonishing how much little pits will help to retain the gold. The rubber dam

is indispensable; you will come short of making a first-class operation if you do not use it. Put little hooks in the corners of the rubber, and attach to strings carried over the ears, to hold the dam up out of the way. He said that he divided the finishing of a filling into six stages:—first, filling; second, scraping; third, stoning; fourth, polishing with fine pumice; fifth, polishing with fine chalk; sixth, burnishing. He cautioned all to be sure and wash off the filling well with soapsuds before burnishing.

Dr. MILLS thinks the best excavators are the three-edged; he received from Dr. Brockway, of Brooklyn, N. Y., an instrument that is a sort of scoop; this is very generally useful; it does away with burs. His manner of filing teeth is now to wedge immediately. A short time ago he went back to separating by rubber. The main stepping-stone to success is the preparation of the cavity. He uses two excavators, a scoop and a file, to finish edges. He wants perpendicular walls. He has used many kinds of gold, but now prefers adhesive. He uses foil, mostly Nos. 8, 10, 15, 40, 60, and 120, preferring Nos. 15, 40, and 120. He makes slots for retaining-points, and commences with heavy numbers, as they retain better and stronger. The heavy foils, he thinks, produce a better class of work, but require more care in packing. He thinks that if fillings were hollow, but the walls well adjusted, they would be better. The packing of gold around the surfaces and margins of the cavity, he thinks well of. Sometimes, in turning over the heavy foil, or folding, it makes a corner, and some object to it. He practices burnishing or beating the edges of the tooth and the filling, bending all down solidly. When he says "beat," he does not mean a heavy or brutal hand,—it can be done with heavy pressure. In using the mallet, it should give the blow in the direction of the axis of the tooth. He has had cases where the mallet could not be used.

Prof. KNAPP is no advocate of any extensive use of cements, but believes they may do well in some cases. He would not call attention to anything but a wash for cements; it is the *Liquor Sodæ Chlorinatæ*. It is a deodorizer and alkaline, quickly removing all odor or smell from the hands. It gets rid of the oxide from cements. Equal parts of water with Labarraque's solution first, and finally washing repeatedly with alcohol, cleans the amalgam very perfectly.

Dr. DICKERMAN, in bleaching teeth, removes all of the carious portion of the tooth, and dresses with camphorated spirits for two or three weeks. If it is advisable, lines the cavity with oxychloride of zinc. A tooth is not dead so long as it has any attachment, and it may be restored to usefulness even when this is very slight. Abscesses that have been

discharging from one to twenty-seven years have healed. We then find cartilage formed. With regard to gold, he had seen teeth filled with from No. 2 to 640, or No. 20 doubled 32 times. Good fillings may be made with all numbers.

Dr. FORBES. With regard to the number of instruments as we advance, very few are used. It is an axiom, that a man does not know a thing if he cannot communicate it to others. One operator says we can learn more by witnessing a single operation than hearing it spoken of for years. He was once taught here that napkins were not necessary, and that *débris* can be blown out of a cavity! He thought a tooth could be better built up by cylinders than any other kind of pellets. In filling a tooth, Dr. Palmer made a slot and put a piece in it, holding it in position until condensed. He then built down, claiming that, in twenty years after, if taken out, it will be pure and clean beneath! Now, if the heat beneath is 95° , what if the patient eats ice? It will reduce it to 35° or 40° , and must contract.

If a cylinder were placed at the side of a cavity and condensed there, the filling may be thus one-half completed, and the cavity is gradually reduced as more and more are added. Cannot the small cavity left be filled as well as a large one? A cylinder filling will remain perfect as long as a keystone in an arch!

The paper of Prof. Knapp reads as if all should be made by cylinders with hand-pressure. If the mallet is used, it would be found to be a labor-saving machine.

He never touches his fingers to the flesh, but always lays a napkin in the mouth. Operators are telling us that by heavy foil they can put in more gold. He would like the experiment tried with cylinders.

With regard to operations in St. Louis, they have a book like a bill book, with two diagrams of the mouth on each page, so that one can be torn off and sent to the patient. Then, by abbreviations by letters, they make the charges quite as well as by complicated, arbitrary signs.

Dr. WALKER has met with success with biborate of soda for washing amalgams. He presented, as an alloy for casting metal plates, in place of vulcanite—

Bismuth, 1 part;
Pure tin, 15 to 20 parts.

To make sharp castings there is nothing that he knows of better.

Prof. ATKINSON. The only way to learn is by close attention and presence at operations. He would prefer to have the filling hollow, if solidly adapted to the walls. With few instruments, under the inspiration of necessity, we can make excellent operations. We should not

talk of contraction of gold from cold, and forget the tooth-substance. There is no appreciable change of the two, or, if any, it is not of importance.

How many are here who never saw their preceptors put a filling in a tooth in the mouth! Do not operate for any one who will not permit a third party to be present. Let the students excavate teeth in the laboratory, and finally go to the office and do *as some of my students have done,—never make a failure.*

It is damnable for a man to wilfully destroy a pulp at any time. If any vitality is left, there is hope of saving the organ. Twenty years ago I came to that conclusion. November 4, 1857, I dedicated myself to save each, all, and every part that it was possible to do.

“Operative Dentistry.”

Prof. ATKINSON. How would I bleach teeth? If iron discolors, cut all away but as small a portion as possible for strength; fill full of oxalic acid crystals; put a drop of water in the cavity, and mash the crystals in it. There are other agents,—salts of copper, etc.,—if we sufficiently understand chemistry, that would be available to bleach. We can use chlorine gas through a small glass pipette; must be carefully used, as it might cause œdema of glottis. Here the rubber dam is valuable. Chloride of lime, Labarraque’s solution, etc., are all good.

You must not hope too much in bleaching teeth. The great majority will bleach if left to the open air. Fill with wax for a short time, and on taking it out, wash with salt water. Pure oxide of zinc with chloride of zinc is good to put in as a creamy mortar, filling the tooth full, twirling a piece of cotton in it; then cut out all but a small, thin stratum, to see the color. Don’t get the teeth too white.

I generate chlorine glass by black oxide of manganese and hydrochloric acid. This works very rapidly.

The agents supposed to color the teeth may be iron from hæmatin, as the mineral, or they may be of vegetable origin; if the latter, these colors are bleached by chlorine.

My process for saving nerves, or portions of them, is to cut away all diseased parts of the tooth possible without giving too great pain, and then to sop with creasote every day—better twice a day. Often a little pus will come away. I have found the bulb come away, and leaving the pulps alive and red in the roots. In one case I have taken out the pulp of all but one buccal root. When recently exposed I treat at once; but, if not, I treat several days, and then I claim that I am no worse off than at first if I should find the pulps dead. Never put arsenic in a human being’s mouth. Then put oxychloride of zinc, of cream-like consistency—

introduce on cotton, trimming off and filling with gold; or fill temporarily or preparatively with oxychloride of zinc.

I make this distinction between creasote and carbolic acid. The latter is crystallizable acid from coal; creasote is a combination of two acids—cresylic acid and carbolic acid. Pure Scotch or German creasote from beech wood I prefer, but don't know why; the perception has not got into me yet.

Every diseased action is below the standard of life, none above. I use creasote to make a carbolate and creasolate of albumen, to make a protection like a scab. This I call calciferous matter, or it may be secondary dentine substance. I have seen only a little or crescent-shaped particle form upon one side of the exposed portion of pulp, and sometimes have seen all filled up. I always leave a little creasote in every cavity, and do not wipe it out too dry. I once put in the capping without pain, on the pulp, and there was none for some time after, but the patient returned, suffering, and I opened and found an empty pulp-chamber. This is better than destroying nerves any other way. Creasote cannot destroy beyond a certain point, unless the pulp is unhealthy, for the saturated condition of the pulp will not take up more than to make this pellicle, which protects the balance.

Alveolar abscess will not occur, unless the liver or the pancreas is out of order. Lower the circulation, give an emetic, and follow up with a cathartic. To the point or seat of pain in the gum apply hot or cold water; no lukewarm. Hot is above 112° ,—say 150° or 160° . Apply hot or cold, whichever comforts the patient. You may begin with hot flannels (wrung out in hot water), using hotter and hotter, until you come to the extreme heat. White corpuscles are young corpuscles; if they die they become pus corpuscles.

Aconite stops neural circulation; sc does heat. They drive back the circulation by contracting the capillaries. If pus corpuscles have formed, cut and let out these devils—*exorcise* them.

If abscess has opened, go through the root and enlarge it until blood comes through. Wash with water and tincture of calendula. Thus I get rid of all foreign substances, go through the alveolus, and amputate the end of the root, if it is necrosed; fill with gold by making a shoulder inside of the pulp canal, and to this point in each root press the gold, filling it completely. Then open the fistula large enough to see the apex of the root, and cut or polish off, as you please. Inject sulphuric acid and water, taking care not to let it run over the mouth; then fill the opening with tannin and glycerine. Chloride of zinc may be used, 480 grs. to the oz. of distilled water. All fibrils found in teeth are post-mortem results. Tomes does not call them nerves.—*Cosmos*.

SELECTED ARTICLES.

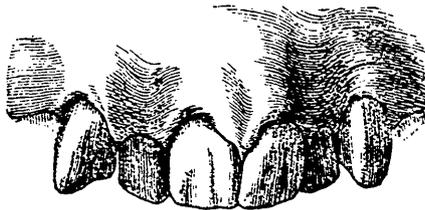
HEREDITARY TRANSMISSION OF DENTAL IRREGULARITIES.

By J. H. McQUILLEN, M.D., D.D.S., Professor of Physiology in Philadelphia Dental College.

In another family the mother has the superior lateral incisors standing within the dental arch; the right lateral being so far back as to close behind the lower incisors when the jaws are shut. An effort was made to correct this defect, when about seventeen years of age, but owing to incompetence on the part of the operator, or impatience on the part of the patient, the attempt proved unsuccessful.

The eldest daughter of this lady, when fourteen years of age, had the superior lateral incisors occupying the same position in the dental arch as in the mother's mouth, while the canines of each side were so markedly prominent as to resemble tusks, and proved not only unsightly when the mouth was open, but in addition a source of great inconvenience in the movements of the upper lip (Fig. 3). The canines of the

Fig. 3.



mother had been quite prominent at the same age; owing to the efforts of nature rather than the dentist, these now occupy correct positions.

After an expenditure of considerable time, labor, and patience on the part of the operator and patient, due to the dense and at first apparent unyielding character of the alveoli, the young lady's teeth were brought into, and now remain in their proper position, much to the satisfaction, indeed unbounded gratification, of the parents, particularly the mother, who had begun to despair of a successful result. It was one of those cases in which the practitioner, owing to the necessarily prolonged treatment, finds not only the patience of the patient giving way ever and anon, but recognizes in addition the absence of that moral support on the part of the parent which is so important in encouraging a child to persevere in efforts which, if successful, must prove of marked advantage.

The want of this encouragement, no doubt, has been often felt by every practitioner of extended experience, and has frequently led to the abandonment of cases when just on the eve of successful consummation.

In the treatment of this case, the left upper first bicuspid was extracted, and india-rubber rings were then passed around the necks of each lateral incisor, over the labial surface of the canines, and secured by silk ligature to the first molar of each side. These were renewed every other day for some time, and resulted in bringing the canines almost into their proper positions. Very little, if any, change, however, was effected in the right lateral incisor. It appeared to be firmly and immovably fixed in the maxilla. In addition to this, every time the jaws were closed, the occlusion of the teeth tended to keep the tooth in its false position. A silver bar, similar to that described in the preceding part of this communication (page 29, January number of the *Dental Cosmos*), was now made, and the india-rubber rings passed over it, and around the right and left lateral incisors. At the same time an inclined plane of hard rubber was constructed to fit upon the lower front teeth and strike inside of the upper laterals when the jaws were closed. With this arrangement, which the patient could readily adjust, the desired result was obtained. It was only gained, however, by carrying the patient through the trying ordeal, in the most determined manner on my part. It may not be amiss to state that, in cases where the alveoli are so firm and apparently unyielding, satisfactory and permanent results can only be secured by slow and gradual efforts, depending to a certain extent on the assistance afforded by nature in the growth and expansion of the jaws. After the teeth have been brought into their proper position, it is necessary that they should be *maintained* there for some time by ligatures, or they will fall back into the old places again.

The next daughter of this lady, nine years of age, had the superior lateral incisors slightly within the arch. This defect was readily corrected with the silver bar, rings and inclined plane referred to.

There are several other cases which have come under my observation and care of a similar character to those cited, but passing over these, I would now invite attention to a most interesting and peculiar series of cases illustrative, in a most marked degree, of the hereditary transmission of dental irregularities.

Of these, a gentleman who kindly consented to have an impression taken of his mouth to illustrate this article, as will be seen by the accompanying engraving (Fig 4), has never had any upper lateral incisors. He states that his father was also deficient in these teeth.

In the eldest son of this gentleman, aged nineteen, an attempt has been made on the part of nature to supply the deficiency manifested in the grandfather and father. The effort, however, as will be observed

the engraving (Fig. 5) drawn from a model of his mouth, has only been partially successful, as the lateral incisors are quite diminutive in size.

Fig. 4.

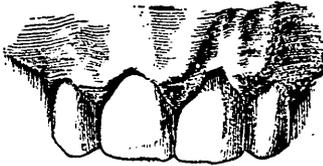
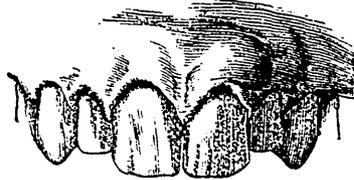


Fig. 5.



An elder brother of this gentleman, who has several children, had dwarfed upper lateral incisors, which were extracted along with the centrals, when a young man. The eldest son of the brother, aged twenty-one, has the natural incisors dwarfed, while in a younger son aged fourteen, the upper laterals are absent, as in the case of the grandfather and uncle: a daughter, aged eleven has dwarfed laterals.

In the preceding portion of this communication evidence has been presented of the most conclusive character of the transmission of hereditary peculiarities in the dental organs, not only from parent to children, but in addition from grandparent to grandchild, reproducing in the third generation that which was, to a certain extent, modified if not passed over in the intermediate one. These cases are in accordance with what has been long recognized by physiologists in the transmission of normal and abnormal peculiarities in other portions of the human organism. This law of hereditary transmission, or what Mr. Darwin denominates *atavism*, prevails throughout the entire organic world, vegetable and animal, and it is through its operation that each species produces beings similar to itself.

At this time, when the origin of species is an all-absorbing subject of consideration on the part of many, and of investigation with a few, it is possible that the dental organs may perform a not insignificant part in the solution of this important question. When is remembered the prominent part that the teeth have occupied from the time of Cuvier to the present, in the palæontological researches of Owen, Leidy, and others, determining with unquestionable accuracy the character, habits, and peculiarities of extinct animals, in some instances building an entire being accurately conceived from a single tooth, the possibility of what has been suggested above assumes additional plausibility.

On this point, however, the writer does not anticipate being able to do more than merely direct attention to a few additional facts in connection with dental irregularities, leaving it with others to determine whether the teeth may aid in the solution of the origin of the species, and hoping that the suggestion may stimulate some minds to investigate in this direction.

As Sir Charles Lyell has very justly remarked in the "Antiquity of Man:" "In the very outset of the inquiry we are met with the difficulty of defining what we mean by the terms 'species' and 'race;' and the surprise of the unlearned is usually great when they discover how wide is the difference of opinion now prevailing as to the significance of words in such familiar use. But in truth we can come to no agreement as to such definitions unless we have previously made up our minds on some of the most momentous of all the enigmas with which the human intellect ever attempted to grapple." Again: "From the time of Linnæus to the commencement of the present century, it seemed a sufficient definition of the term species, to say that a species consisted of individuals all resembling each other, and reproducing their like by generation."

"Lamarek proposed that the element of time should enter into the definition of a species, and it should run thus: A species consists of individuals all resembling each other and reproducing their like by generation, *so long as the surrounding conditions do not undergo changes sufficient to cause their habits, characters, and forms to vary.*

Without pretending to decide such questions as these, but simply confining ourselves to facts as presented to the actual observations of daily experience, in connection with dental irregularities, not only is the law of hereditary transmission observable, but quite as frequently a tendency to *variation* is offered. Thus, it is not unusual to find irregularity manifested in children whose parents are remarkable for the symmetry and regularity of their teeth.

Again, irregularities of the teeth among aboriginal men have been observed as rare by those who have made the subject one of extended and careful observation. The opportunities, in the Academy of Natural Science of Philadelphia, afforded me of examining Morton's collection of skulls—many of savage nations—are in confirmation of this. The large development of the maxillæ and facial bones generally, which give a preponderance of the animal over the moral and mental, in the face of a barbarian, has very properly been attributed to the tough character of his food, the imperfect manner of its preparation, and the general habits of savage life. The large size of the maxillæ affording ample room for the dental organs, the latter could not be other than symmetrical in their arrangement. The influence of soil, food, and climate in modifying the physical, moral, and mental energies of man, is a truth very generally recognized at the present day; and the influence of food, in modifying the physical structure, is made markedly manifest in the changed condition of the maxillæ, in the diminution in size, attendant upon the

employment of the softened food of civilized life, requiring little effort in mastication, in contradistinction to the coarse diet of the savage. In childhood, when the bones are in a plastic condition, the influence of diet, of a soft or hard nature, of course exerts a marked influence upon the form and size of the maxillæ; and it is a matter of considerable moment, that children should be supplied with food requiring some effort in mastication. The contrast presented in the broad jaws of the English and German is markedly in contrast with the contracted jaws of the American; that the difference in character of food, and the difference in time devoted to its mastication, has much, if not all, to do with this, will be generally admitted. When a diminution in the size, or a change in the form of the maxillæ ensues, from whatever cause, unattended by a decrease in the size of the teeth, irregularity necessarily follows. A prolific cause of this is also found in the interblending of families, or rather of nationalities, particularly in our own country, where the descendants of the English, the Irish, the German, the French, Spanish, etc., are constantly intermarrying; the difference in the size and form of the maxillæ and teeth in these nationalities produce in their offspring irregularities of the most marked character.

When examining a series of jaws of different ages, arranged so as to show deciduous and permanent teeth, it is not a matter of surprise that there should be irregularity in the permanent set; but, when observing their crowded and irregular arrangement in the jaw, prior to eruption, it is rather a matter of astonishment that they should ever assume a regular and symmetrical appearance.

Having noticed the hereditary transmission, and the tendency to variation, on the part of the teeth, it is not an uninteresting question to ascertain what will be the result in those cases of irregularity, transmitted from parent to child, that have been corrected by the efforts of the dental practitioner. Will the irregularity be reproduced in the next generation, or not? This is a matter for future observation, and will demand years for its solution.

HYPODERMIC MEDICATION IN DENTAL PRACTICE.

BY W. F. MORRILL.

The particular branch of therapeutics which I am invited to present you at this meeting, is hypodermic medication. The introduction of this method is comparatively of recent date. M. Belier, a Frenchman, discovered, or originated it, and gave it popularity. Previous to his time, we had, and still have, numbers of methods of endermic medication—acupuncture, vesication, innoculation, are among the varieties em-

ployed—which attain similar results. Where diseases are of local nature, not very persistent, any of these methods possesses excellence and value. But the hypodermic method, on account of the ease and readiness with which it can be employed, renders it decidedly advantageous. The instruments used for this purpose consists of a small syringe, made of glass or rubber, holding about a drachm, graduated, or not with a scale, and furnished with fine pointed, gold plated steel tubes of various sizes, which are thrust through the skin at an angle, while attached to the instrument. The medicines used are previously prepared in accurate solutions, and in administering them care should be observed while injecting the fluid into the tissue that the canula be withdrawn before the syringe is emptied of its entire contents. This precaution is deemed necessary on account of air, which might be forced into the circulation,

Advantages.—The advantages of the introduction of medicines directly into the tissues of the system, instead of through the stomach, are chiefly the rapidity, intensity, and certainty of action which it secures. Moreover, the quantity of medicine employed is much reduced, more uniformity of action, and the time required to affect the system much less. The reasons for these advantages will be most apparent. The condition of the stomach from which absorption is dependant, may possess an irritability along the coatings, such as shall prevent the retaining of food or medicine. In the act of nausea and vomiting, it would be difficult in the extreme, where medicines have been introduced into the stomach and immediately rejected, to know whether any, all, or what quantity remains. Under such circumstances a repetition of doses, unless time be given, would be very hazardous. The quantity of food remaining in the stomach exercises a retarding influence, and sometimes the gastric juices decompose the properties of medicine before absorption takes place.

It is also claimed by those who have much experience in hypodermic methods, that less nausea is likely to occur, less headache, less disturbance along the digestive apparatus; that it is more permanent, more prompt, uncomplicated, and decided; chiefly illustrated in the treatment of local disorders, especially in neuralgia of a particular nerve. It is an opinion generally accepted, that the administration of medicines into the stomach do not become anodynes where anodynes are intended for local pain, without affecting the whole economy. It is therefore recommended, when the object is to relieve local pain, the injection should be made near the seat of disease, due regard being had for the safety of the parts.

It is not my purpose to refer to, or enter into any details with respect to the specific use and action of therapeutic agents, employed hypoder-

mically, with which the medical publications can amply supply you ; but rather to submit, briefly, some suggestions pertinent to the introduction of this method in our own practice. There are some forms of disease which come to the notice of the dental practitioner that are proper for him to undertake the treatment of. Among these, seated within the maxillaries and contiguous parts we have dento-neuralgia, irritable pulps, pulpitis, pericementitis, and other disturbing pains, which are within the true province of the dental art to control. Dento-neuralgia, perhaps, presents the most difficult type, and baffles longest our best and well directed efforts before it will succumb. Among the narcotics chiefly used subcutaneously in proper doses, conjointly, and which produces unequivocal effect in the mastery of this disease, are acetate of morphine and atropine. The more recent discovery of the hypnotic virtues of hydrate chloral, which are now being tried hypodermically, with much promise of success. Hydrate of chloral is represented, when admitted into the circulation, as becoming changed into chloroform, and producing very similar characteristic effects to that renowned narcotic. The blood is said to become, thereby, thinned, when chloral is used hypodermically, the temperature lowered, and a sleep of a protracted duration, lasting several hours.

If such are some of the patent virtues which hydrate of chloral possesses, it will certainly have decided advantage over the hitherto great sheet anchor of materia medica, opium. And especially in inflammatory stages just begun, where the act of arrestation of blood corpuscles in the capillaries are impeded, this drug would experience a potent influence in promoting nutritive action by returning them to the circulation. This phenomena, called resolution, is certainly very desirable in diseased action, especially with threatening symptoms of alveolar abscess, unyielding to local treatment, if we can set bounds to it, neutralize the sthenic stage, or appease it, and control the formative action, we have accomplished one of the high missions of a skilled Dentist.—*Register*.

AMONG THE DENTISTS.

The following amusing account of a Reporter's visit to the American Dental Association meeting, held in Nashville, is taken from the *Banner* of that city:—

“A newspaper man is supposed to feel an interest in everything, big babies, big turnips, horse races, base ball clubs, robberies, elections for constable, and all sorts of things which engage the attention and excite the interest of one or many. So we went up to mingle with the tooth pullers. A very intelligent body of men they looked to be. The majority fully up to or above the medium size, and most of them possessing serenely joyful countenances acquired from the constant contemplation

of excruciating human suffering. There were a few, however, fragile and effeminate looking delegates, who, from appearances, would not be able to hold a two-pound weight at arm's length. It won't do, however, to calculate on a dentist's strength from his appearance. We once knew a girlish-looking member of the profession whose complexion vied with the best pearl enamel or lily white, whose eyes were as blue as the sky and who had nothing manly in his appearance, save his moustache. This sign of virility was coal black, and would have done honor to any man six foot by three. It was not unlike two gigantic caterpillars bristling for combat under his nose. The person who counted on his being weak labored under a painful delusion. Weak, did I say? Why, the fellow actually practiced with a pair of fifty-pound dumb-bells, and rung the changes in them with an ease and grace which would have done honor to a circus athlete. His muscles were like bands of steel. We have seen that effeminate-looking man throttle a giant six feet four and broad in proportion, who was perfectly wild with the torture of the instrument and was struggling like a lion in the operating chair, wrench open his jaw and draw out the offending tooth as though he were handling an unruly child.

In one of the ante-rooms of the hall of meeting, there were a couple of those improved racks for torture called dentists' chairs. Ah, how softly padded were those deceitful machines, and how bright the velvet with which they were covered. A red-haired sanguine looking man was illustrating with the help of an assistant, the vast advantages which they presented as compared with the old fashioned chair. That was a wonderful seat which the chief executioner was illustrating and expatiating upon with great volubility. It bristled with polished cranks and screws and slides that made our blood run cold as we saw them swiftly manipulated. A single turn of the crank would throw the unfortunate patient into a horizontal position and enable the operator to throttle him while thus helpless; another thrust and the chair swung to one side and the victim's head could be pinned under the operator's arm as in a vice; touching a lever and turning a crank shot the occupant several feet in the air, where he could be firmly held and his upper jaw devastated while he was helpless; touching the lever again and turning the crank lowered the sufferer to the floor in such a position that he could be secured motionless by the operator's knee. The eyes of those around us gleamed with strange satisfaction, and their countenances were lighted up with exultation as they watched these rapid movements. We alone stood spell-bound with horror. What if those savage men, longing for a victim, should seize upon us and pin us to that horrible rack? We fled from the spot.

As we passed up the room we saw another door ajar. There was no one

within, but upon a long table were displayed all those keen and glittering instruments of torture found no where except in a dentist's operating room. A horrid fascination caused us to enter. Did you ever shudder at the dreadful display of tools known to no profession but that of the man who cures the tooth ache. We have, and those dreadful forms will live in memory while life shall last. Well, imagine all the blood-chilling instruments of a score of dental establishments collected together and spread out in one awful array. There were big forceps and little forceps, cork screws and chisels, and big cant hooks, which looked as though they were made to lift the teeth of a mastodon. There were drills and punches, and bodkins, and files, and saws, and lancets, and screws, and sharp tubes, and dreadful looking machines for applying laughing gas, or ether. To one side stood a bushel basket full of teeth, old roots, pieces of jaws on jaw, broken and forked fangs, decayed in all sorts of ways. They were grim trophies, and we retreated from this place even more speedily than from the first. If we don't have the night-mare for a six months we shall consider ourselves lucky.

But now the hour of meeting had arrived, and the President of the Association, a veteran operator, with a countenance hard and stern, called to order.

The particular subject up for that day was operative dentistry. And presently there arose a sallow, feeble looking man, whose voice was also feeble and obstructed, to lecture. He first showed how the dentist could keep his accounts without having recourse to a book, and in a sort of dental short hand. Diagrams were used in the illustration and explanation, and we remember that the first was a female head, after some classical model perhaps, with the face cut up into four sections by lines passing, the one perpendicularly through the nose, and the other horizontally through the mouth. The next diagram showed the teeth as they would be divided by these lines, and we learned that we had thirty-two teeth, or at least should have that number, had not five or six of them retired from business. The four sections were named right superior, left superior, left inferior, and right inferior. The next cut showed four sets of figures, from one to eight, standing off like classes in a district school. These figures represented the teeth, and by an ingenious arrangement of hieroglyphics, the lecturer proposed to note at once what had been done to any particular tooth in the human head.

Now, said he, I regulate the amount of my charges just according to the amount of force, vitality or nervous energy expended in an operation. I will not work in any other way, and my patients all understand it. I make my charges on the spot when I can calculate just how much vitality

I have consumed in the work. The lecturer looked as though, on this scale, the filling of a tooth would cost about \$75 or \$100.

The speaker now described the process of filling a tooth. It was very interesting. "Take," said he, "for instance, the second molar anterior, right proximo, cavity inclining towards the labial wall. First, cut away the face, smooth down, saw out and leave strong angles. Now commence with No. 0, put down the point firmly and strike with the lead mallet; build up all around, carefully filling the lower and upper inferior and superior arches and the right anterior cavity, using tools Nos. 1 and 2. Lay on the gold with the serotium and advance to the proper angles and finish off carefully the ridges and valleys, promonteries and capes of the original."

This was clear and lucid; we began to feel like a dentist. The man is a wonderful one, thought we. At the end of the lecture we found ourselves standing beside a tremendous six footer from St. Louis. "Doctor," said we, "who is this doctor P—?" (the lecturer.)

"He is," replied my gigantic friend, "a gentleman from Ohio; one of those erratic geniuses who are so difficult to follow. Now, with the exception of a few minor points, perhaps, in what does his mode of operation differ from yours?"

This was a stunner. Yes, to be sure—what was the difference. We were plunged into a profound reflection. We revolved the whole subject from beginning to end. We have thought of it constantly ever since, and we pledge you our word, reader, we cannot up to this moment decide in what his mode of operation differs from ours. This is the penalty of being mistaken for a dentist. "In what ——," why it may take years to solve that question."

EDITORIAL.

SUBSCRIPTIONS FOR THIS VOLUME.

Those of our subscribers who have sent us their \$2, will accept our thanks. Those who have forgotten to do so, and some of our best supporters have procrastinated, will be kept "ever green in our memory" if they comply before the New Year.

We intend to take "a flying trip" among our *confreres* in Canada, during the year, and would like to meet them all as subscribers. The Journal is devoted to the interests of the Dentists of the whole Dominion. Gentlemen! do not hold back from freely giving us your support. You will find it will well pay you.

We send this number to all whom we *feel sure* intend becoming subscribers. Any who object to paying in advance, will please write us, stating their reasons. We are always open to suggestions for improvement, &c.

B.

The next number will contain several valuable original articles; a draft of a Dominion Fee Bill, &c., and will be illustrated.

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The process of combining and purifying the metals is such as to guarantee comparative freedom from the tarnish of fillings, or discoloration of teeth, so often observed from the use of ordinary Amalgam. Ten years' experience with it in the hands of some of the most skillful members of the profession has proved its excellence. The increasing demand for a reliable Amalgam has prompted the introduction of this article, with the confidence that it will give entire satisfaction to those who use it rightly.

To manufacture a superior Amalgam, always uniform in quality and texture, at a moderate cost, it is necessary to make it in large lots, and by the aid of machinery. It is also necessary that each lot be thoroughly tested by a competent Dentist before offering it for sale. The inventor has made such arrangements for its manufacture as to enable him to guarantee the reliability of every package.

To meet the wants of different operators, two grades of the New Amalgam were manufactured (fine and medium coarse).

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From a communication to the *British Journal of Dental Science*, by Charles James Fox, M.R.C.S., L.D.S., we give the following extract:

"I have been for some time expecting to see some communication respecting this cement, recently introduced, as every one who tries it expresses privately extreme satisfaction with it. When this is the case, I think it is only fair to say so publicly. It is of the same nature as that commonly called osteoplastic, but it differs from it in this particular, that it can be mixed to a consistence much resembling putty, and in that state can be manipulated for some minutes without setting irretrievably. If you mix the other osteoplastics as thick as this, they set rapidly or crumble; if you use them in a thinner condition, they run about on the gums and teeth. When once set it is so hard, if it has been properly manipulated, as to turn the edge of the instrument, should it be deemed requisite to remove it. As to its durability, it is of course impossible to say much, seeing that it has only been introduced into England for a few months; but this much may be said, that, taking four months' experience with other cements, and four months' with this, I have found it so superior that I have entirely discarded all other osteoplastics, amalgams, etc. In small cavities in the incisors, or in shallow cavities where osteoplastics would wash out in a short time and dissolve away, Guillois' Cement remains at the end of four months as good as when it was put in. I cannot tell what further experience may prove, but so far—and only for four months' experience do I speak—I have not had one failure, which is more than I can say of any other."

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Its reputation is already established; a result of its working qualities, apparent in the fact that it makes a very uniform paste,—so tenacious that it can be readily adapted to the most difficult or irregular cavities—that from its great density it is not permeable to the fluids of the mouth, and will neither crumble nor wear away in mastication.

If used according to directions in cavities *properly prepared*, it will tarnish very little, if any.

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This caution becomes necessary in consequence of some unprincipled parties offering worthless amalgams, of their own make, using our name to insure a sale. No one has our recipe nor the right to use our name in the manufacture of amalgams. "A word to the wise is sufficient."

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We quote from the *Materia Medica* compiled by James W. White, and published by Samuel S. White, of Philadelphia:

"This preparation has been extensively tested as a capping or temporary filling over freshly exposed pulps, and with results which are represented as highly gratifying. For this purpose the solution should be diluted with water so as to be only just strong enough to cause the mixture to set. On its removal, months after, the subjacent-pulp has been found healthy, and even protected by a deposit of secondary dentine. The success which has attended its use gives hope of relief from the necessity of extirpating exposed pulps, when they have not taken on a highly inflamed condition. The cavity having been cleaned, creosote should be applied to the exposed pulp, and the oxychloride introduced in a semi-fluid state. The pain experienced varies in intensity. It is generally of short duration, but may in exceptional cases continue for an hour or even longer. The permanence of this material greatly depends on its being perfectly protected from the fluids of the mouth till it becomes quite hard (requiring about half an hour), which may be assured by any of the methods deemed most advantageous for preventing the ingress of saliva; the rubber-dam, in this connection, as in the insertion of gold, proving a most valuable appliance. It is best to introduce a surplus of material, to admit of trimming to proper shape, which may be done at once, although it is advisable to cover it with a layer of gutta-percha in chloroform, and allow several days to intervene, for the more thorough solidification of the cap prior to the removal of the excess of material and final insertion of the metal stopping.

"There is another direction in which oxychloride of zinc proves a most valuable adjunct in efforts for the preservation of teeth, viz., in filling the bulk of cavities in treated teeth. By this method many advantages accrue, among which may be mentioned the saving of time and expense, with an equally durable result; the diminution of the risk of periodontitis, so liable to supervene upon prolonged violence; the avoidance of risk of fracture in frail teeth, and the equal support insured; the obviation of the yellow color when the enamel is thin; and, in the event of subsequent trouble, the comparative ease with which its removal may be effected. The gold must of course leave no portion of the oxychloride exposed.

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ESTABLISHED 1860.

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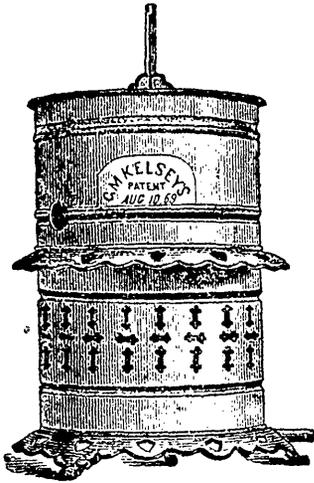
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The apparatus is so constructed as to make any size required. By this process, better work can be done. The rubber vulcanized is tougher, of finer texture, and can be made of ANY DEGREE OF FLEXIBILITY, ELASTICITY OR HARDNESS DESIRED. All kinds of rubber gum can be vulcanized by this method; by means of which Plates are made of better color, tougher and more durable, and made to fit better than is possible by the old mode.

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1 to	20 sets,	\$1 96 per set, or 14 cts. per tooth.
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Unlike the Tooth-Powders commonly in use, this article is made into neat, portable cakes, divided into little tablets each of the right size for use, not liable to scatter or be wasted, and therefore very convenient, especially for Travelers. There is no occasion for dipping the brush into the box, thereby soiling what is not used, but a single tablet, enough for one brushing, may be broken off and put into the mouth; thus, several persons can use from the same box with perfect neatness and propriety.

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This is to certify, that, being personally acquainted with I. W. Lyon, D.D.S., of New York City, and having been informed by him of the precise ingredients composing the Dentifrice known as "DR. I. W. LYON'S TOOTH TABLETS," and having ourselves used the same, we do unhesitatingly commend it to the public as the *best and most convenient Dentifrice now extant* :

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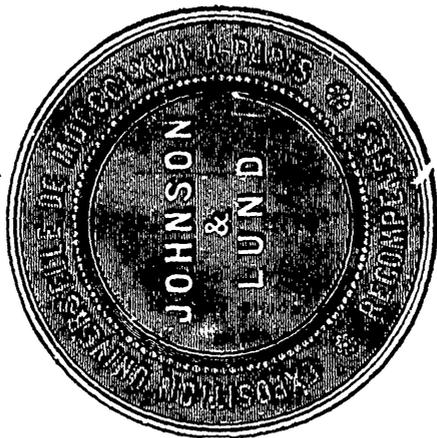
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It is particularly adapted for full lower plates. For upper and lower parts of sets it has many decided advantages over the different cheap materials so much in use. In contact with aluminium there is no perceptible galvanic action or change of color. It receives a brilliant polish with very little labor.

Parties using this metal are not required to purchase a license. No additional apparatus required.

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Dr. Weston:—Your metal is used and recommended by the Missouri Dental College to its students.

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Yours truly,

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We have tested this metal in the case of entire lower sets, and are inclined to the belief that it is superior to anything of the kind which has yet been brought to the notice of the profession. We advise a trial of it by those who object to rubber. There is no doubt but that it is stronger, and will keep its color better in the mouth than any of the cast plates in use.

(From *Missouri Dental Journal*, May number.)

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(From *Missouri Dental Journal*, Nov., 1869.)

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(From the same Dec. number.)

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**Much Lower Prices than asked by other
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Our Vulcanite Teeth, Gum Sections and Plain, are all fitted with Double-Headed Pins, or Pins with a head on each end.

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We have a full and varied assortment of all kinds and styles of Teeth in use, embracing

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