

X RAYS IN DENTISTRY

THEIR APPLICATION A DEVELOPMENT OF PRESENT CENTURY.

Professor Price Believes the Road to the Mouth an Organ to Be Particularly Cared for.

Cleveland letter: The use of X-rays by the dental profession as a progressive measure is one of their forthcoming lines leading light to their developments in surgery.

The excellent service they can render was demonstrated by me in detail and technique at the recent meeting of the Roentgen Society of the United States in New York. I show now how their application can be roughly worked out.

Some of the many applications are as follows: It is a matter of frequent occurrence for one or more teeth to be decayed in their eruption or perhaps they always lay concealed just below the surface.

It also frequently occurs that they are never formed at all. In all such cases the Roentgen rays will locate them if present, in exquisite detail, showing their exact position and usually the cause of the delay. Take a practical case, for example, a lady, over 30 years of age, has never erupted her permanent cuspids, (improperly called eye-teeth or canines). These should have appeared at about 12 years of age. Her features were seriously marred by the large spaces left where they should have been. The gum and bone had receded to such an extent that it seemed quite certain they had never formed. The X-ray pictures show the teeth to be just beneath the surface and can be brought to place without any pain in a very short time with simple regulating appliances. This regulating could not be done to better advantage 15 years earlier had this information been known. I have had a good many cases like this, where one or both of the permanent cuspids were missing, and almost invariably, have found them embedded in the bone, and frequently lodged against some other tooth, usually the lateral incisors. It is exceedingly rare that the permanent cuspids are not formed, though frequently they do not erupt until years after the proper time.

It is a comparatively frequent occurrence, however, for the permanent lateral incisors never to be formed, though they are also often hidden just beneath the surface. They should appear at about 8 years of age, but frequently are yet missing at 15, and a great question is how to arrange the teeth that are present to the best advantage. This could quickly be decided if it could be known whether or not the missing teeth could ever be expected, which fact the X-rays demonstrated perfectly. For example, a boy of 15 was brought by his dentist to find the position of his permanent lateral incisors, the central incisors had been drawn close together, a long time before to make space for them and fastened with a retaining appliance, and then all parties concerned waited for the appearance of the missing laterals. The laterals have never formed and hence the course of treatment was wrong, though the natural one to pursue.

Many cases present themselves where a temporary molar is retained long after the time for it to be shed, and it cannot be ascertained whether the cause is that the bicuspid which is to take its place has never formed or is developing in the wrong direction, or is simply delayed. A boy aged 15 has retained firmly a temporary molar which would generally be shed about 9 years of age. The permanent bicuspid has formed, or rather is forming, for its root is not complete yet, but is developing, it is only producing absorption of one root of the temporary molar the other holding it very firmly in place.

Frequently serious irregularity and deformity can be prevented by recognizing early enough that a tooth is developing in the wrong direction, when we see a bicuspid developing towards the roof of the mouth. Sometimes they develop in the wrong direction from some cause and get lodged against another tooth, and if this could be known the matter could be easily corrected by regulating the other teeth, and thereby preventing serious deformity of the teeth and expression of the whole face. Very unfortunately we have never before had a means of recognizing these cases prior to the use of the X-rays. In one of these cases on one side above, but one bicuspid had been formed by nature instead of two, and it developing back against the first permanent molar. The cuspid is fully erupted. Radiographs were taken three months apart, and it was found that nature was not correcting the position of the lodged tooth. The girl had a serious depression of the upper lip. Partly because of this, it was necessary to correct the trouble, which fortunately was simple, when the facts were known. The temporary molar was extracted, and a very small retaining appliance was placed on the molar and cuspid to push them apart to make room for the expected bicuspid to come down. The second view of the case demonstrated the improvement in 60 days, and without a particle of pain to the patient. This tooth has been regulated, though it has never been seen.

Probably there is no more painful complication of the teeth than an erupted third molar, (improperly called wisdom tooth). It is usually caused by its developing in the wrong direction, generally at an angle against the second molar. They are entirely covered by tissue, so their position or size cannot be ascertained, and hence are exceedingly difficult to extract. The third molar has formed at just right angles to its proper position, and is entirely under the effect of the tissue.

How many people will have an abscess about the teeth at some time, the exact location a cause of which could not be determined. Usually they are caused by a putrescent or dead pulp

LADY ROBERTS, WHO IS SAID TO BE THE ENEMY OF BULLER.



There is a great kick in England against the management of the War Office, which is said to be too much under petticoat rule. The wife of "Little Bobs" is said to have compelled her husband to insist on Buller's dismissal.

(improperly called nerve), in some tooth or an imperfect root-filling. The radiograph will show the exact location, size and shape of the abscess, and also its cause, which is often distant from the apparent seat of the trouble.

One of these abscesses shows the exact extent of the absorption of the bone around the teeth, about an inch and a half long and half an inch in diameter. The abscess had its fistula back beside the second bicuspid and it was thought the seat of the trouble was in that vicinity and was treated accordingly. The trouble persisting in spite of expert treatment the patient was sent to me for a radiograph, which showed the trouble to come from the diseased root of the lateral incisor, which had a year previously been filled, but was not suspected. Upon treatment in accordance with the information of the radiograph the case had a speedy and complete recovery.

It is next to impossible to fill some root canals perfectly because they are so small or crooked. On the other hand, every tooth without a live pulp must have its roots filled properly, or it is liable, sooner or later, to cause an abscess at the end of the roots. It is seldom that patients remember coherently which teeth have their roots filled, hence when a case presents with neuralgia or swelling of the cheek the dentist sometimes has to drill into teeth that are not at fault before he can find the trouble. The radiograph is the ideal method of ascertaining the cause, for it will show with great clearness the condition of the root canals and root fillings, as well as the exact location of the abscess, thereby saving much time and expert labor in exploring, which is often both painful and destructive. While the taking of the radiograph is entirely without sensation and only a matter of a few minutes to have a chart of the whole condition.

There is a natural cavity in the bone of the face just above the teeth, just below the eye, known as the antrum. Frequently this is the seat of serious inflammation. The cause sometimes arises from the pus of an abscessed tooth draining into it, or from a diseased root perforating it, all of which conditions are shown in the radiograph.

The few examples of practical cases mentioned are scarcely a suggestion of the wide range of application, for I have 500 examples. I should mention one other which represents a frequently-occurring complication. A patient had suffered for about three months with a severe neuralgia and all efforts to find the seat of irritation causing it failed. The teeth all gave normal tests. Radiographs were taken of all the teeth on this side and a blind abscess was found at the apex of a bicuspid tooth which seemed to be perfectly healthy. The pulp or nerve in this tooth had died and caused the abscess at the end of the

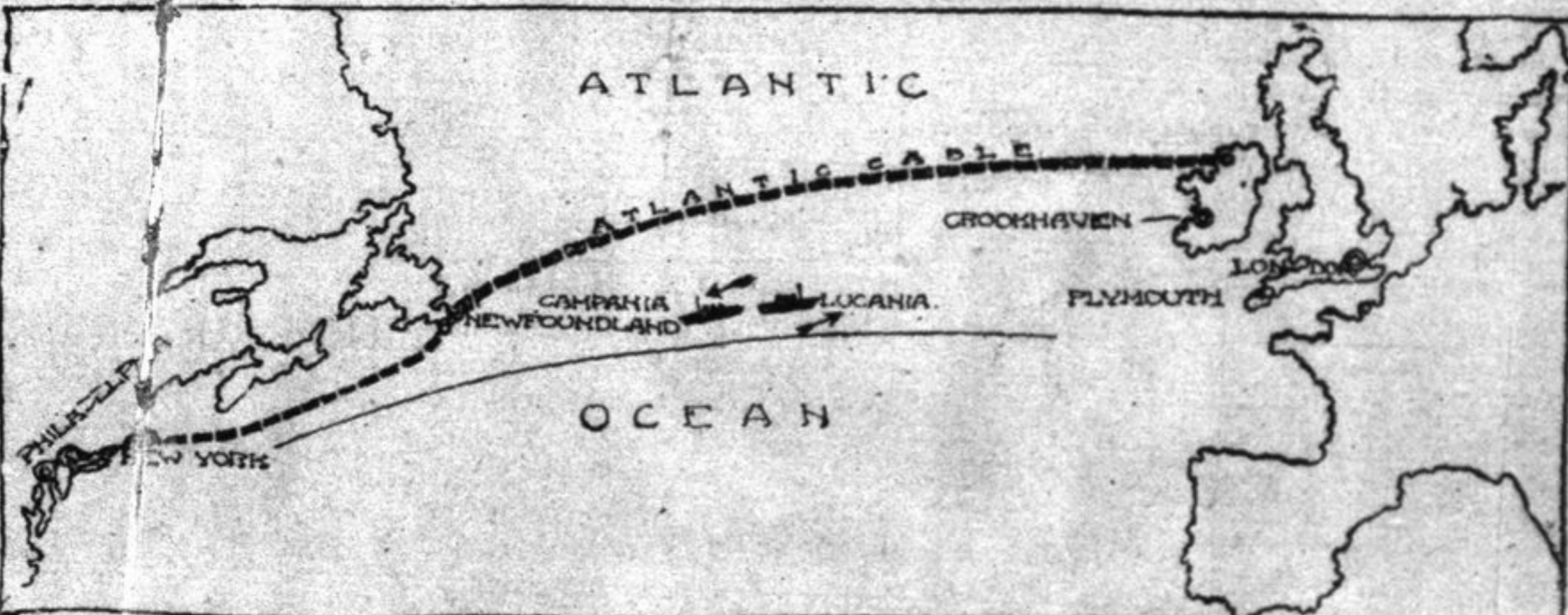
root which by its pressure on the nerves of the tissue was causing all the neuralgia, for when this condition was treated and the root filled the trouble was immediately cured.

If space permitted I should tell you and show pictures of a great many other conditions in which the X-rays give us just the information required. As for example, absorption and decay of the end of a root around which there has been an abscess, and how the rays help us in cutting off the diseased part of the root without extracting the tooth. Then showing how the bone fills in around this amputated root, making it a very firm tooth. Also cases showing decay under fillings inside the tooth. Showing whether we have lanced into an abscess or not, when relieving the great distress of an abscessed tooth. This done by placing small pieces of sterilized lead wire into the artificial fistula we have made and then radiographing. In regulating teeth to show the position of the teeth not erupted and also to show the shape of the roots of the teeth that are to be moved and how they are actually being moved. Showing teeth in tumors of the face and jaws, of which I have several. Showing whether or not we will ever get our third molars. Showing whether the enamel is perfectly formed or not on teeth not yet erupted. Showing in babies the teeth of the second set, forming even before the temporary or baby teeth are yet erupted. I could enumerate scores of other cases, but space will not permit.

It has taken a great deal of investigation to reduce this work to an exact procedure, but it has been so far perfected that an excellent radiograph of the teeth or any of their complications can be produced in from ten to 30 seconds with as much success as a skilled photographer would have done with his subjects in his studio.

The picture is taken on a negative which is a piece of special heavy transparent film, with several coatings of sensitive emulsion, preferably brown. This is wrapped in a light and waterproof envelope, preferably unvulcanized rubber, and cut into pieces about the size of a silver half dollar, but oblong. One of these of the desired size and shape is placed in the mouth against the teeth to be radiographed with the tube producing the X-rays about ten inches away from the patient's face. There is no sensation and it only takes a few minutes' exposure. Great skill and experience are required to produce the rays of the proper order for the particular case and to properly understand the parts to be radiographed, and the picture, when it is properly taken, but this is so of all science and art, and as in these the necessity will produce the competent expert dental radiographs. WESTON A. PRICE, D. D. S., M. D.

WORDS FLASHED FROM MID-OCEAN.



Each day sees new developments in wireless telegraphy and opens up new possibilities of utility. The distance to which messages can be sent has been largely extended and electricians confidently predict that this distance will yet become practically limitless. The above may show the location of steamers when sending messages that have been successfully received in this country.



BILL HOOPER'S LEGAL LORE BY GEO. F. CANIS.

(Copyright, 1901, by G. F. Canis.)

LAWYERS had poor picking in Deadwood in the hurrah days of the camp. Somehow the motley crowd there got into the habit of betting disputes out of court—mostly with six shooters and Winchester. Homelides were of frequent occurrence—in fact, the "man for breakfast" schedule was observed. But vigilantes often interfered and persisted in dropping the killer, even though discussion of the incident was continued. Then, too, when a shot was taken at a claim jumper, that was considered a privileged communication, according to the unwritten law. Except for the fashion and common practice of the camp all the lawyers in it—and there were lots of them—would have had a case apiece and at short intervals. As matters stood, however, it wasn't often that any one of them was able even to arrange for a fee.

When Bill Hooper took a case for \$25 his law partner seriously objected, though it was the first either had had in weeks. Bill said he did it to encourage trade. That was no excuse, for while human anatomy might be carved with impunity or any sharp instrument, prices couldn't be cut. Bill expressed the opinion that his client was a fool for employing a lawyer anyway, for he didn't have a ghost of a show of winning his case, and to take his gold was just like finding it. These were also trivial matters, he was informed. As for finding gold, wasn't that what brought them all to the camp? No one expected to work for it.

Bill wanted to stand well with his partner, who had kith or kin somewhere from whom he thought he could borrow money if it came to the pinch. Bill was lame. As the roads to Cheyenne and Sidney were both long and dusty, he preferred to ride on a stage rather than walk out of camp. From the looks of things, unless business picked up one means or the other would have to be resorted to before long. It was policy for Bill to humor his partner. He went to the saloon keeper who had mashed the head of a man with a bottle and told him he would have to charge him \$100 instead of \$25 to take charge of his case. When the client remarked something about it being a holdup game and declined to be robbed, the lawyer told him there was no defense, for the assault had been unprovoked and \$100 would be dirt cheap to get him off. Bill pointed out that the victim was likely to die, in which event the place to which the ginmill man would go was not noted for laying up treasures. Finally a bargain was made, with the understanding that a \$100 fee would be paid if the case was dismissed or the accused went free; otherwise no charge was to be made by Bill.

The trial was held in the office of the justice of the peace, and the room was packed. Preliminaries over, the justice asked who appeared for the defense. No one answered. Everybody looked at Bill, who was standing in the doorway. He continued smoking, but made no other sign. When questioned, the prisoner said Bill was his counsel.

"Do you appear for the defense, Counselor Hooper?" asked the justice.

"Nop."

"The prisoner says you agreed to."

"He's mistaken."

"Do you intend to take part in this case?"

"Nop."

"Do you refuse to appear in this case?"

"Yep."

"What do you mean, Counselor Hooper, by taking a man's money and then refusing to do your duty to your client?"

"Didn't see the color of his money," was the only comment of Bill. He and the justice were ancient enemies. The later thought he saw a chance to put the lawyer in a hole. He conferred with the prisoner and then fairly roared: "Hooper, you ought to be turned out of court and out of camp. The prisoner says he hired you to defend him and took you for a man of your word and depended on you and consulted nobody but you when there are piles of men in this camp that know more law than you."

Bill waited till the justice exhausted himself and snuck back in his chair. Puffing away at his cigar so he wouldn't have to waste more time and matches on it when ready to resume his smoking, he exclaimed:

"You see it was this way: Jim come to me and wanted me to take this case. I told him I didn't want to take his money for nothing, but just to humor him said he could give me a hundred if I got him off. I knew there was no use trying a case before this court and didn't fool away my time fixing for it. It's just like I told Jim—a man can't get justice in this camp till we're rid of the duffer what thinks he knows law and don't know a little bit."

"You dis, did you?" howled the justice.

"That's what I did," blandly remarked Bill.

"So you go 'round telling the boys I don't know nothing 'bout law, do you?"

The crowd guffawed in chorus, either because Bill's estimate was common property or the expression of it by the justice himself gave them a chance to concur therewith. Here the temper of the justice boiled over. He thumped his desk and yelled out: "Did you tell this prisoner he couldn't get justice in this court?"

"This is no court," was the comment. Without seeming to notice the sarcasm or implied insult, the justice repeated his question. It called forth this response: "Yes I said just that, and what's more, I believe it too, and so does everybody in this camp. A man can't get justice while—"

Gasping with rage, the justice threw himself on top of the desk, whacking it with his fists till the boards cracked, and delivered this decision: "I'll show you, you clubfoot duffer, that a man can get justice in this court: I'll show this camp what a liar you are, Bill Hooper—the prisoner's discharged."

Outside the office the man who was released from custody paid Bill \$100, as he had promised, and then took the next stage out of Deadwood, for he was afraid of vigilantes.

NOTABLE SERMONS.

Religious Discourse That Holds the Record for Pecuniary Value.

London Answers: The pulpit at Westminster abbey was once occupied by a preacher who was not a clergyman, and had never been ordained. This was in December, 1873, when Dean Stanley invited Prof. Max Mueller to preach on the religions of the world. It was one of the most interesting sermons ever heard, and when printed afterward brought in several hundred pounds.

The world's sermon record is held by the late Mr. Spurgeon. His sermons have been published weekly for fifty years past, and there are still enough to last several years more. Over 100,000,000 copies have been sold, and their profits exceed those of any other half-dozen preachers.

For the most valuable single sermon ever preached, it is, however, not Mr. Spurgeon, but Canon Fleming, who holds the record. This discourse was first heard from the pulpit of Sandringham church, on the sad occasion of the death of the Duke of Clarence. It was afterward published, and its profits have since amounted to a total of £1-

488 (\$7,490). The money has been equally divided between the Gordon Boys' home and the British Home for Incurables.

OLD-TIME STAGING.

When It Took Three Days Between New York and Philadelphia.

Philadelphia Record: The remarkable coaching trip between New York and Philadelphia the other day, and the fact that the Philadelphia whips are talking about attempting to lower the time made by young Mr. Vanderbilt and his friends, recall the old days when the stage coach was the only means of transportation between the two cities. The first New York stage via Trenton and Perth Amboy was instituted by John Butler in 1756. The coach left the sign of the Death of the Fox, a well-known tavern in Strawberry alley, and was scheduled to arrive in New York in three days. In 1765 a second line of stages to New York was started, and another competitor entered the field in 1766. This line was known as "The Flying Machine," and guaranteed to make the journey in two days. It started from Elm street, near Vine. The vehicles were advertised as "good stage wagons with seats set on springs," and the fare was 3 pence per mile, or 20 shillings for the entire route. When the railroad between Camden and South Amboy was built stage travel between Philadelphia and New York ceased, except for a short time, when the stage lines attempted to compete with the railroad. This means of transportation was finally abandoned in 1836.

It is worthy of remark that all the force and energy, as well as the capital, were supplied by the Philadelphia end of the line, showing how, even in these early days Philadelphia took the lead in coaching matters.

The Buller affair has been lighted up afresh by a new version of the O'Connell message to General White and by rumors that he is preparing a case for presentation to parliament. It is learned that he considers himself the victim of a South African conspiracy and threatens to unmask his assailants.

Five thousand dollars have been spent in vain for poison with which to kill prairie dogs in western Kansas.