

A. W. Jones

**Geological Find
under Toronto
Bay.....**

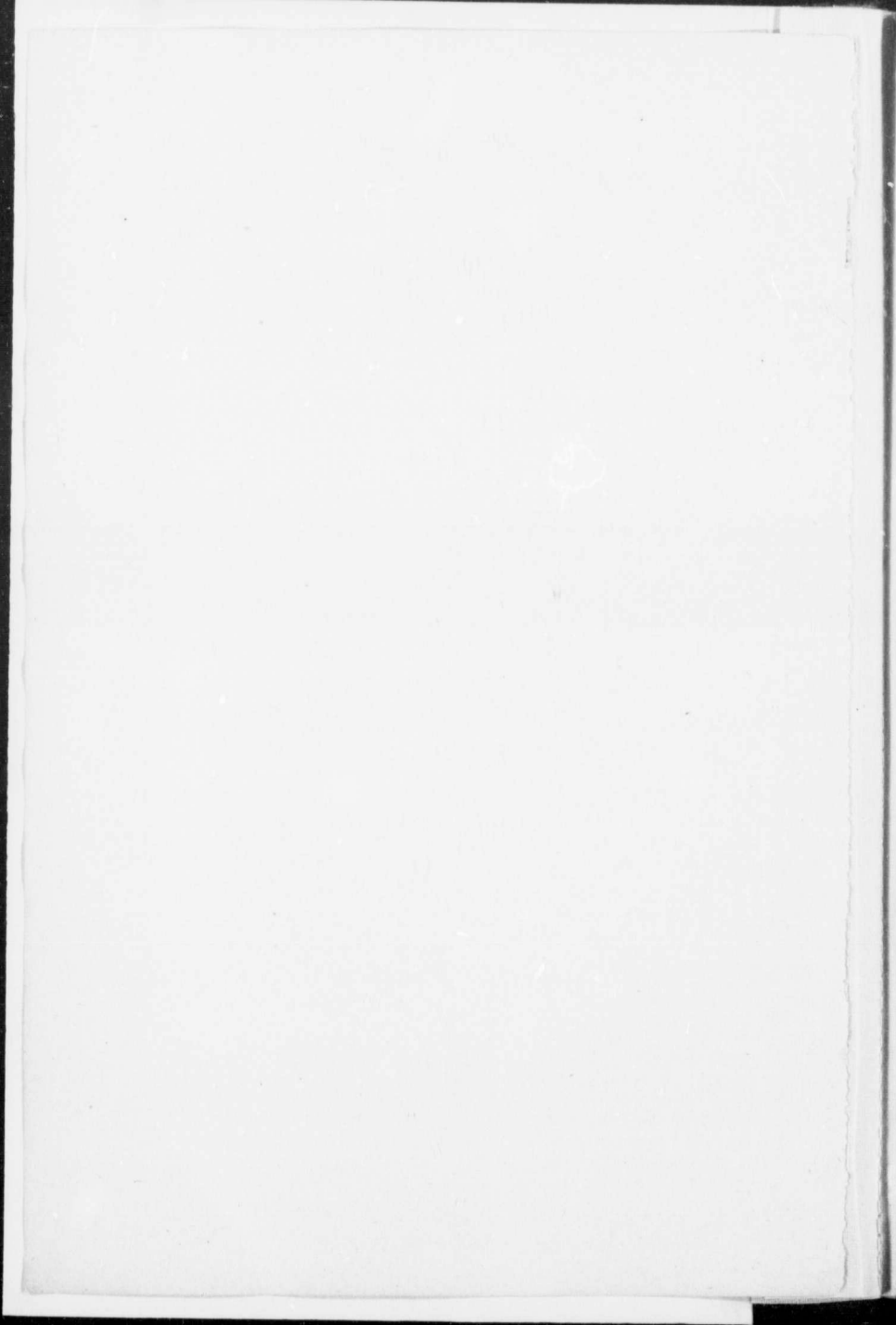
**Facts Concerning
the Discovery of**

**Marks Resembling
Human Footprints**

**Found 37 feet under
bottom of bay basin**

With Illustrations

**From The Evening
Telegram, Toronto,
December 14, 15, and
16, 1908**



TO GEOLOGISTS

This pamphlet contains the story, as told in The Toronto Evening Telegram, of an interesting geological find made during the building of the water-works tunnel under Toronto Bay.

The men, W. H. Cross and William Axford, who describe the marks they saw in the tunnel, are intelligent men, though they have not been trained as engineers in the schools. There are no reasons to doubt the truth of their story, and many reasons to believe in its accuracy. They are both men used to observation and to reporting on what they have seen. Their statements were corroborated by other men who also saw the marks.

At present there appears to be a problem before geologists. If these marks were found in blue clay—and the inter-glacial wood seems to point to that—they could apparently have been the footprints of man. If the material in which the marks appeared was shale, what were the marks made by, and where did the wood come from?

No pieces of the material in which the find was made could be procured for test. The contractors for the tunnel were behind their time and the orders were to stop the work for nothing. The entire place was concreted in on the day the discovery was made, and it was not till some days later that there was any investigation into the facts. The contractors did not keep a diary of the material through which the tunnel was driven.

If there is any explanation of the facts—and all the facts have been collected so far as possible, and are published in this pamphlet—it would be of interest to me to obtain such information.

(Signed)

J. Ross Robertson

Toronto, Ont., Canada, Jan. 1st, 1909.

Please address letters to
J. ROSS ROBERTSON,
Evening Telegram, Toronto.

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Geological Find under Toronto Bay

Story of the Discovery of Marks Resembling Human Footprints made 37 feet beneath the bottom of the bay basin in the Toronto Water-works Tunnel.

There is a mystery in connection with Toronto Bay, a mystery which may never be solved.

In The Evening Telegram of Monday, December 14th, 1908, the following news article appeared:—

Thirty-seven feet down in the blue clay under Toronto Bay they have found human footprints.

This find, in the inter-glacial clay deposited from fifty to one hundred thousand years ago, is the most important geological discovery of that period made in America.

Charcoal—remains of burnt wood—has been discovered in inter-glacial clay in the Don valley, but nowhere in America have traces of human beings been discovered of such antiquity.

On November 13th, in the morning, the concreting gang in Haney & Millar's water works tunnel laid bare, for over thirty feet, a strata of blue clay six feet wide, in which there were over a hundred imprints of human feet encased in mocassins.

FIND INTER-GLACIAL WOOD.

At the same level, near the footprints, a piece of inter-glacial wood, some 12 inches long, was also found.

These footprints were found 1,000 feet from shaft No. 2, and at a place 70 feet below the water level of the bay.

Some hundred feet south of the big find at the same level some imperfect footprints were discovered.

All the footprints, excepting a few which went sideways, were pointing towards Toronto. They varied from slight depressions to two inches in depth.

W. H. Cross, city inspector, and William Axford, Haney & Millar's fore-

man, telephoned to Engineer Gibson, but as the orders were to rush the work, they broke up the strata and concreted over the place before he arrived on the ground.

CROSS DESCRIBES IT.

W. H. Cross, of 21 Oak street, described the find as follows:—

"It looked like a trail. There were over a hundred footprints. You could follow one man the whole way. Some footprints were on top of the others, partly obliterating them. There were large footsteps of all sizes, and a single print of a child's foot three and a half inches long.

"All the footsteps toed in. You could see the hollow between the ball and the heel in many of them, and they were all made with mocassined feet. In some places you could see where the toe had been driven in and the clay had shot up underneath the heel. All the footsteps pointed north except where some turned off to the side.

"We tried to get a piece of the blue clay up, but it was very soft and always broke.

HOW IT WAS PRESERVED.

"This piece of blue clay was at grade in the tunnel. A shot had been put in at each side, and the men were cleaning the loose rock from the floor to go on with the concreting. That is how it was preserved. When one strata of the clay was cleaned off these footprints were underneath.

"About one hundred feet south of the trail we found remains of footprints at the same level, but they were indistinct.

"Between the two lots of footsteps I picked up some pieces of stone, which appeared to me to be petrified twigs."

WILLIAM AXFORD TELLS.

William Axford, of 64 Defoe street, corroborated the statements made by W. H. Cross, and said:

"The footsteps were as clear as those made by a man's mocassined foot stamped into stiff mud.

"At the same level I found little nuggets of iron pyrites and a piece of wood about a foot long. I broke it in pieces and gave it to the men. I found this wood near the footsteps.

"At the place the find was made the water and mud is 33 feet deep. Between the bottom of the bay and the top of the tunnel there is 30 feet of clay. And between the top of the tunnel and the clay with the footprints was seven feet.

W. H. Cross made a sketch, showing how the footsteps went, and also made footprints in damp sand to show how deep and clear the marks were.

PROF. COLEMAN'S OPINION.

Prof. A. P. Coleman, of the University of Toronto, who is an authority on the inter-glacial period, says:

"If the statements of these men are true, and there is no reason to doubt them, and the prints were in the blue clay, it is the most important find of the inter-glacial period ever made on the American continent.

"Wood and charcoal have been found in the inter-glacial clay before in America, but no traces of man have been found.

"These prints would date back from fifty to one hundred thousand years ago.

"In France the remains of the inter-glacial man shows that he was a very clever fellow. They have pictures of reindeers, horses, and mammoths made by him on bone."

Prof. Coleman examined a piece of the wood round and pronounced it to be inter-glacial wood found only in blue clay.

SHALE OR BLUE CLAY.

"If, instead of being in hard blue clay, these marks are in shale, they will not be human footprints, but will be the marks of something else. For the time when the shale was laid down was before the advent of man in this world, and the only animal found was a fish. Man is estimated to have been only some 150,000 years on this earth.

"Unless a man is a trained geologist he cannot tell the difference between hard blue clay and shale."

In the Hand-Book of Toronto, under geology, it says: "The city itself is built upon drift clays, which have accumulated upon the flat surface of the rock, to an average depth of thirty feet."

The Hand-Book continues to say that the drift clays are of recent origin, but that the shale underneath is very ancient.

HOW FOOTPRINTS GOT THERE.

Professor Coleman continued: "Toronto has experienced two glacial periods. Between the two periods—that is, in the inter-glacial period, Lake Ontario was a much smaller lake than it is now, and the bottom of the bay was above water.

"During that time the land was so tilted that the water from Georgian Bay flowed directly to Lake Ontario. This stream is called the Laurentian River. It was on a delta of blue clay brought down by this river that the prints were made.

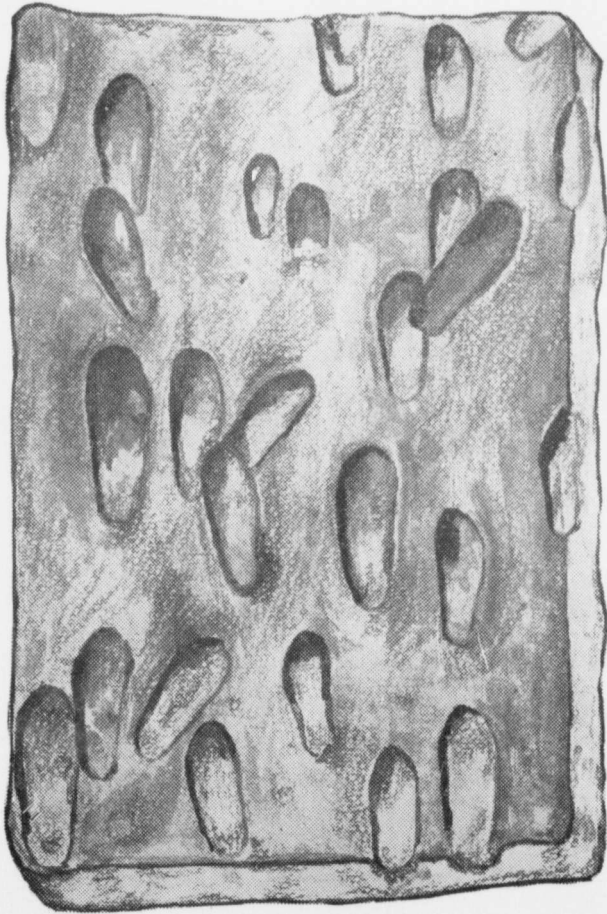
"These prints were probably dried in the sun and then a new strata of blue clay was laid over them.

WATER COVERED THEM.

"In that time it was warm here—about like Ohio. Then came the second glacial period, which tilted the land like it is at present. The water from Georgian Bay and Lake Superior began to come down through Lake Erie like it does at present. Lake Ontario became greater in area, and the water rose to its present level.

"Those mocassins are a surprising thing, but then it is quite possible, and even probable, taking into consideration the character of the inter-glacial man in Europe, that the man of that time would wear mocassins. The mocassins and the toeing in would seem to show that they were the ancestors of our Indians."

Professor Coleman examined the "twigs" and said they were not wood, but were formations like coral. They belonged to the shale formation, but added that finding them in blue clay was not unlikely as sometimes shale was forced up into the blue clay. The iron pyrites were found in blue clay and had no special significance.



DRAWING SHOWING FOOTPRINTS FROM DESCRIPTION AND SKETCH OF W. H. CROSS.

MORE ABOUT GEOLOGY.

In regard to the piece of wood the Hand-Book of Toronto has this to say: "The clays reposing upon the solid rock belong to the drift and boulder formation, and are of three kinds, buff, blue and yellow. Fragments of trees are not uncommonly met with in the blue clay, which lies nearest the surface of the formation rock."

Peter A. Porter, in his book on Goat Island, says in speaking of the glacial period:

"The weight of this vast ice sheet had canted or tilted the land to the northeast, so that at its recession the waters of the present three great northern lakes flowed east by the Ottawa and later, as the land rose, by the Trent Valley. It should be noted that the land to the northeast is even yet rising, or slowly regaining its former level."

FROM DAVID BOYLE.

David Boyle, of the Normal School Museum, said:

"It is not impossible that the marks under the bay were made by human feet, but I should not say that it was probable.

"The Indians about Toronto were known as the Attiwandarons, and belonged to the Huron Iroquois. To the north of them again were the Tobacco Indians or the Tionomitates.

"These Indians were here when America was discovered, but that is not very long ago.

"It is generally conceded now that the mound-builders were the ancestors of the present Indians, and I believe there was an older race than the mound-builders.

WORK OF EARLIER RACE.

"We find articles not made by the modern Indians or the mound-builders, of beautiful workmanship. I have a large collection of these articles, which has not been exhibited yet. They were found near the surface, being turned up by the plough. There is nothing geologically to prevent their having been made by the men who made the footprints, if they were men's footprints.

"But we have no dates and no periods in the aboriginal life here, and so no comparative time.

"Moccasins are very ancient, and were first made of grass. They were

tied on the sole of the foot. Then the grass was changed for hide, and the fastenings and fashion changed the shape.

MAMMOTH AND MAN.

"In Toronto, when they were excavating for Eaton's new store about two years ago, they found the bones of a mammoth twelve feet below the surface in the blue clay. On Dupont street they found the bones of another mammoth, also in the blue clay. In both cases it looked as if the animal had been mired in the marsh.

"It is not certain in spite of all the investigations that mammoths and men lived at the same time in America. But in Europe there is no doubt about it.

"If these footprints are genuine, and were made by man, it is not impossible that man lived in America at the same time as the mammoths.

"The Rev Mr. Gass, of Davenport, Iowa, found a pipe carved to resemble a mammoth. But the Smithsonian Institute people say it is a fake. There are also several mounds in the western States which are said to represent mammoths. If this is so, of course, man lived in America at the same time as this animal."

WORK OF EARLY MAN.

David Boyle then showed his specimens of the work done by the men before the mound-builders.

There were beautifully shaped axe-heads, of Huronian slate, with curious markings. There were sandstone pipes with faces on them. There were stones carved like oars and canoes, and a pick of stone, which people have suggested is an ice-pick.

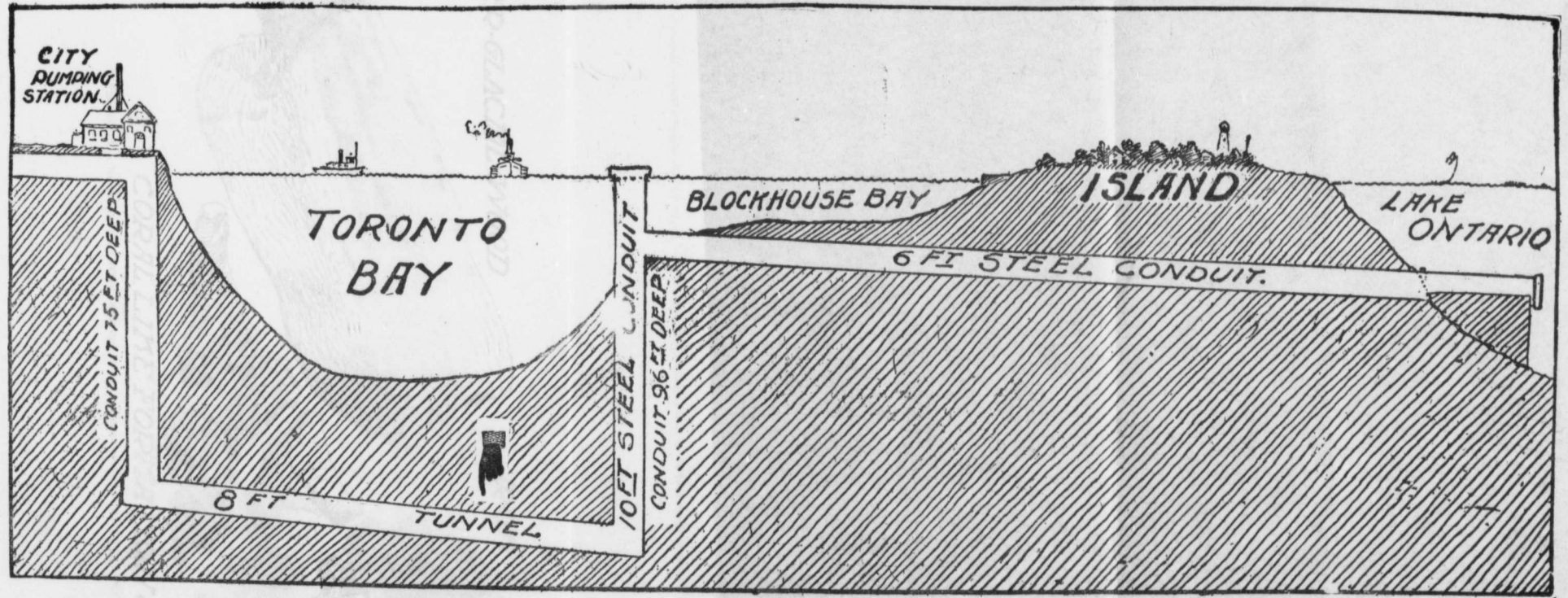
About the moccasins, Mr. David Boyle produced a pamphlet by H. Long Roth, which said:

"When we first compare the footgear of the North American Indians, known as moccasins, with that worn by the better-to-do Europeans at the end of the Middle Ages, we are, I think, most of us inclined to believe that moccasins were introduced into America by Europeans. But such a belief is quite wrong.

"Nunez refers on several occasions to the footgear of the natives with whom he came in contact—natives to whom articles of European manufacture had not yet filtered down."



Bay. The Hand Points to the Place in the Trench Under



Cross Section Showing Water-works Tunnel Under the Bay. The Hand Points to the Place in the Tunnel Under the Bay where the Footprints were Found.

MORE

In regard
Hand-Book

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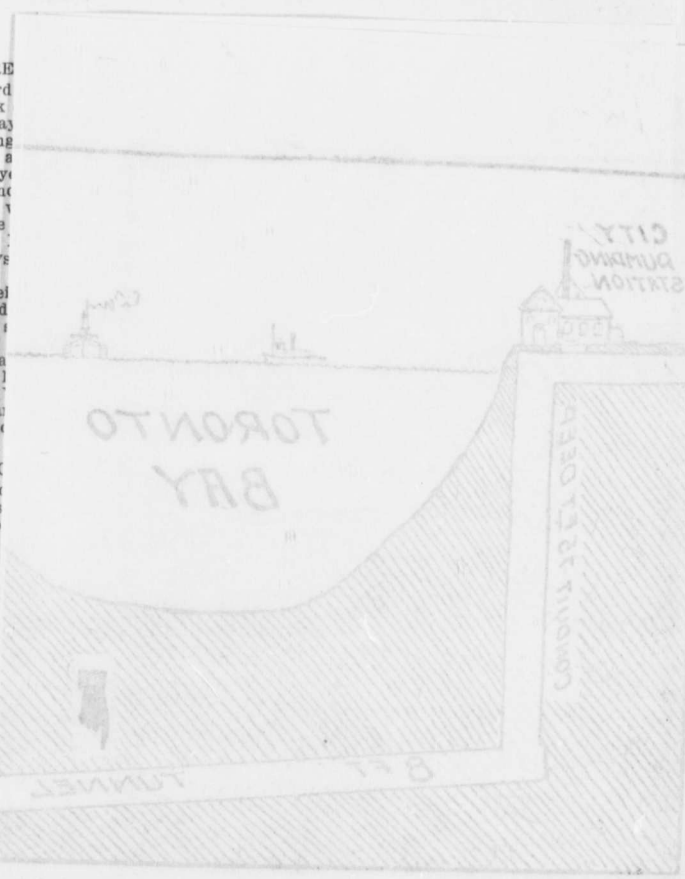
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Cross Section Showing Waterworks Tunnel Under the

INTER-GLACIAL WOOD

IRON PYRITES



CORAL-LIKE FORMATIONS.

INTER-GLACIAL WOOD, IRON PYRITES, AND CORAL-LIKE FORMATIONS FOUND UNDER THE BAY.

TORONTO'S INTER-GLACIAL BEDS.

Professor A. P. Coleman, in his pamphlet on the Inter-Glacial Periods in Canada, says that the Toronto formation is the best-known and most complete of the Canadian inter-glacial deposits.

In the deposits are discovered maple, paw-paw, hickory, ash, red cedar, Osage orange and other woods. The maple, the acer pleistocenium, is now extinct; the paw-paw is no longer found in Canada, and the Osage orange is found in the south of the United States.

After the inter-glacial deposits were made, the waters in Lake Ontario rose to about 60 feet above the present level, and beds of clay, sand, and gravel, with iron oxide, were deposited. The Don stage of the inter-glacial period could not have been less than some hundreds of years, as a rich and varied forest growth advanced one hundred miles or more from the unglaciated region in that time.

PROFESSOR INVESTIGATED.

On December 14th Professor A. P. Coleman decided to investigate all the evidence obtainable for himself. And the following account appeared of his researches in The Telegram of December 15th:—

Prof. A. P. Coleman is puzzled over the footprints found while making the water works tunnel under the bay.

He went over to No. 2 shaft, interviewed W. H. Cross and Wm. Axford, climbed over the dump from the tunnel, put some specimens in his pocket and said:—

"This is a mystery — a mystery which probably will not be cleared up now. It is a great misfortune that a geologist was not called before the marks were obliterated, or that a slab was not taken up. No one now can pronounce definitely what they were."

Besides City Inspector Cross and Foreman Axford, Wm. Harris, 270 Wellington street, and H. King, 14 Clarence square, saw the marks and describe them as footprints.

W. Harris said:—"I am certain they were the footprints of moccasinéd men, they were so very clear."

And H. King said:—"I have no doubt these footprints were made by the feet of man; they could have been made by nothing else."

THE MYSTERY.

When Prof. Coleman, who is a specialist on the inter-glacial period, asked for specimens of the stuff in which the footprints were found, the dump was searched by W. H. Cross and Wm. Axford, but none of the actual stuff could be found.

Neither man could tell exactly where the stuff had been dumped, and the best they could do was to show the professor pieces from the dump which they said was of a similar character.

Wm. Axford said that at certain places blue clay had been found underneath the shale. It was so soft in places that it could be spaded out.

THE INTER-GLACIAL WOOD.

Cross-examined on the piece of inter-glacial wood by Professor Coleman, Wm. Axford said:—

"It was found by an Italian to the south of all the footprints, and on the day after we discovered them. He gave the wood to me. It was quite a long piece. I broke it up and gave it to various men as souvenirs."

And then Wm. Axford and W. H. Cross made marks in the snow to show Prof. Coleman how the footprints looked and how deep and clear they were.

Roy Taggart, 400 Wellington street, who is now in St. Catharines, also saw the footprints.

THE MYSTERY.

Prof. Coleman said:—"This affair, when I first saw the wood and identified it as inter-glacial wood, seemed simple. But it has now become a very complicated problem. And it is quite probable that the problem will never be solved."

"In the first place it is quite possible that human footprints could be found in blue clay laid down from fifty to one hundred thousand years ago."

"But the sample shown as similar to the stuff on which the marks were formed is shale.

"Shale is very ancient, and certainly there were no men on the world when shale was laid down. The highest organism was a fish.

MORE COMPLICATIONS.

"But then the men are certain that these marks were footprints, and if

they were footprints of course the stuff could not be shale.

"Besides, there could be absolutely nothing in shale which would leave impressions which would make anyone think they were footsteps or would look like the marks as described by the men who saw them. And the men certainly believe that they were footprints.

"If this stuff was shale and these marks were in it, what were they caused by? It is a mystery.

AND THE WOOD.

"Then the wood complicates the whole situation again. For that piece

HIS STATEMENT.

Professor A. P. Coleman, of the University of Toronto, gave the following signed statement about the finding of the supposed footprints:—
"Department of Geology, Dec. 15, 1908.

"The finding of supposed human footprints in the tunnel under Toronto Bay naturally aroused lively curiosity, and the discovery near by of a piece of wood very much like the wood from our interglacial deposits near Toronto, suggested that the footprints, if real, might be of interglacial age. Thus



MAP SHOWING SMALL SIZE OF LAKES DURING INTER-GLACIAL PERIOD. DOTTED LINES SHOW PRESENT SIZE OF LAKES.

of wood is inter-glacial wood, and could not be found in shale. It could only be found in blue clay. I shall send a piece of it down to a celebrated man in the States to see what he thinks about it.

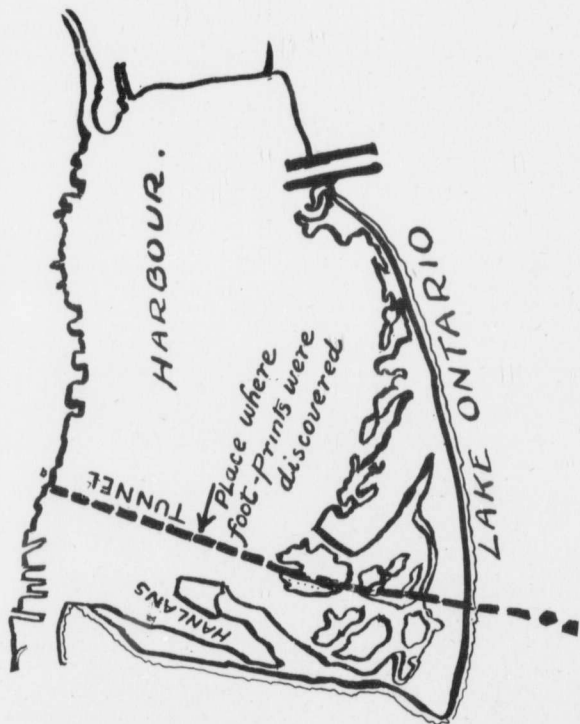
"Beside this piece of wood, from the description of the blue clay deposits underneath the shale, it appears that the whole stratification at the place is very irregular.

"If I could have seen the footprints, if I could only have seen a slab of the stuff with a print in it, even a piece of the material, it would at least have enabled me to lighten some part of the mystery.

far there has been no certain evidence of the presence of man in America so early as inter-glacial times, though he undoubtedly existed then in Europe.

"Yesterday afternoon I visited the spot where the material from the tunnel was dumped, and found that it was not inter-glacial clay, as had been inferred from the presence of the pieces of wood, but Hudson River shale, a very ancient rock belonging to lower Palaeozoic time.

"Those who saw the marks were convinced that they were prints of moccasined feet. While this might have been possible in clay of inter-



MAP SHOWING TUNNEL AND PLACE IN THE BAY WHERE FOOTSTEPS WERE DISCOVERED.

glacial age, it is, of course, quite out of the question in rocks as old as the Hudson River shale, when the highest animals known were fish.

"As the shale has crumbled and the spot where the supposed footprints were found is now covered with the cement lining of the tunnel, we shall probably never know what the markings so much like footprints really are. No known fossil of the Hudson River has any such appearance.

"It is a great pity that a matter of so much interest should be left as an insoluble mystery.

(Signed) "A. P. COLEMAN."

CRITICISM.

Joseph B. Tyrrell, having been quoted in a paper on the subject he was interviewed, with the result that the following article appeared in The Telegram of December 16th:

Joseph B. Tyrrell, M.A., B.Sc., a prominent mining engineer, discourages the theory that the prints found while the waterworks tunnel under the bay was being concreted, were made by inter-glacial man.

But the best he can do to explain the facts is to say: "If they were in shale they may be plant impressions. There are no plants, animals or fishes known in the shale period that would make such impressions. It might have been a species new to science."

Referring to an article in an evening paper of yesterday, in which he was quoted as saying that he was convinced that the markings were made by "the pyrobobites, a sort of a lobster," Mr. Tyrrell said:

"The printers got things mixed. I was called up over the telephone and was not given any of the original facts. You see I am a mining engineer, and have not looked into geology textbooks for a long time, and I am rather rusty in the matter."

ABOUT THE SHALE.

Mr. Tyrrell continued: "It was unfortunate that the marks were not seen by geologists. With so many good local geologists there should

have been an inspection every month. Even if these marks were not footprints it was an interesting discovery.

"I do not doubt in the least that the men who discovered the marks thought that they were footprints. But if they were in shale they could not have been human footprints.

"If it was in clay it might have been the footprints of man or some animal.

"If the stratification under the bay was irregular, and there were depressions in the surface of the rock, the blue clay might have been found in the tunnel."

IN BLUE CLAY.

Mr. Tyrrell was told that Foreman William Axford had found the back bone and ribs of a fish in the roof of the tunnel.

"That would be in blue clay," commented Mr. Tyrrell, and continued: "And about the piece of wood discovered, that could only have been found in blue clay. But it might have found its way down if the surface of the strata of rock was irregular.

"I have not followed the driving of the tunnel, but from the description of the place where the marks were found I would say that they were in a strata of hard-pan clay, between a hard and soft bed of rock. Such a place is where fossils are most easily preserved.

FOSSILS IN THE SHALE.

"When the shale was laid down there were trilobites and various kinds of shell fish, but none of these were large enough to have made the marks as described.

"I don't know any plants of that period which would make such impressions, but there are some seaweeds of curious shapes. There is one, a double ball shaped plant, which would be too small to have made the impressions.

"It may be that the marks were the impressions of the leaves of a large sea-weed, but if it was a sea-weed it is a plant unknown to science."

WILLIAM AXFORD'S SIGNED STATEMENT.

William F. Axford, who saw the supposed footprints in the tunnel, gives the following signed statement. The drawing he refers to is the wash drawing made from the description and sketch of City Inspector Cross.

THE STATEMENT.

To whom it may concern.

I, William F. Axford, 64 Defoe street, Toronto, foreman of the Tunnel Works for Haney & Miller, on the 13th of November, in the morning, was working in the waterworks tunnel under Toronto Bay at a point about one thousand feet north of the bottom of No. 2 shaft. After pumping out the water from a depression in the tunnel, and having had it brushed and cleaned, there was laid bare a strata of material some thirty feet long by seven feet wide with marks in it which I believe to be human footprints. There were over a hundred of them. I called City Inspector Cross and he agreed with me that they were the tracks of human feet encased in moccasins. We tried to bullpoint a piece out but it broke. We sent word up to the top and some of the men came down and saw the marks, and also thought they were footmarks. There was one mark about three and a half to four inches long

which we took to be the footprint of a child. The bigger marks were as big and bigger than my own foot and I wear a number 7 boot. In some places there were marks as though the toe of the moccasin had been shoved deep into clay, the clay spurted up under the heel. Some footprints turned to the side.

I cannot say what material these footprints were in. While driving the tunnel in this part we would find about every fifteen feet a hole of solid blue clay, soft enough to be spaded out. These footprints were eighteen inches below grade and we concreted right over them.

On the morning of the 14th some hundred feet south of this place we found other footprints but they were not so distinct.

On the morning of the 15th an Italian named Charlie brought me a piece of wood which he had found at the grade. This piece of wood I broke up and gave to various men as souvenirs keeping one piece myself which I eventually gave to The Evening Telegram.

The drawing attached represents the appearance the footprints had accurately.

Signed, December 18th, 1908,
WILLIAM F. AXFORD.

