In the Privy Council.

VOL. 4

No. 72 of 1936.

ON APPEAL

FROM THE COURT OF KING'S BENCH FOR THE PROVINCE OF QUEBEC

BETWEEN

WILLIAM I. BISHOP LIMITED and
THE BANK OF MONTREAL
(Plaintiffs and Cross-Appellants before Court of King's Bench) ... ... *Appellants*

AND

THE JAMES MACLAREN COMPANY LIMITED
(Defendant and Cross-Respondent before Court of King's Bench) ... ... *Respondent*

RECORD OF PROCEEDINGS.

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43, 1937

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DEPOSITION OF HARDY S. FERGUSON

A witness produced on behalf of Defendant.

On this seventh day of March, in the year of Our Lord, one thousand nine hundred and thirty-three, personally came and appeared Hardy S. Ferguson, of Dobbs Ferry, in the State of New York, Civil Engineer, aged 64 years, a witness produced on behalf of the Defendant, who being duly sworn, doth depose and say as follows:

Examined by Mr. Geoffrion:, K. C., of Counsel for Defendant:—

Q.—You are a Consulting Engineer?

A.—Yes.

Q.—Will you take communication of a statement of your experience as an Engineer, and will you please file it as Exhibit D-35?

A.—Yes.

Q.—There are a good many titles mentioned there, and I see you have designed between twenty and thirty dams, which have been constructed, and you have been consulted with regard to others. Were they large dams?

A.—Some of them quite large, and others were small. Some of them were considerably larger than the Cedars Dam as an illustration, and some much smaller.

Q.—There is a note in pencil which you say is not yours. I see you went twice to Russia at the request of the Soviet Government. Was this in respect of dams?

A.—No. Those were industrial factories.

Q.—What was your connection with this work we are concerned with?

A.—I designed the Cedars Dam, and was one of the engineers during the construction, that is, officially named in the contract.

Q.—We note that there was an engineer of the Government, who had certain jurisdiction, and an engineer for the owner, who had another jurisdiction?

A.—Yes.

Q.—You were represented by Mr. O'Shea, who had as assistant. Mr. McIntosh?

A.—I was.

Q.—Referring to your experience as to other dams, can you tell us what the first precaution is which should be taken before building and placing the crib required to support the cofferdam?

A.—I should say that the first operation would be to thoroughly examine the bottom and see its nature happened to be as to depth, and what the material consisted of, so far as possible, and from which the general design of the cofferdam and its method of constructing would be determined, and afterwards the construction would proceed.

Q.—We will stop at the preliminary investigation: it is suggested that we have here a representation at a certain spot, twenty feet apart across the river about where the cofferdam was supposed to be placed; there was an indication on a map given by the engineer which you note of a ledge twenty feet apart?

A.—Yes.

Q.—You know that plan very well?

A.—Yes.

Q.—It was also stated that subsequently, soundings were taken by the contractor's representative with a rod, at about ten feet part. What have you to say of that from your experience, and what is done in your practice to deal efficiently with that preliminary examination?

A.—It would be my opinion that soundings taken at that distance apart, would be entirely too far apart to determine closely enough the topography of the bottom, and permit of shaping the bottoms of the cribs...

Q.—When you say, the topography of the bottom. what do you mean?

A.—I mean its contour.

Q.—For what purpose?

A.—For the purpose of shaping the bottoms of each crib, to fit the bottom at the site at which it was to be sunk.

Q.—Can you tell us how close soundings ought to be. Can you give us an idea of the topography of the bottom?

A.—Of course, that would depend entirely upon the roughness of the bottom at any particular spot, but I should say that in making soundings the entire bottom ought to be covered, at least, a rod dragged over it at almost every spot, of the bottom, to be occupied by a crib, to detect any projections

Q.—You said the purpose was to shape the bottom of the crib?

A.—Yes.

Q.—Is it necessary that the crib should adjust itself to the shape of the bottom?

A.—Well, it is quite important in my opinion that that should be done, and that the crib should be landed and sunk in the place for which it was designed.

Q.—If it has to be shaped after soundings have been taken, to the bottom, it must be placed on that part of the bottom for which it was designed?

A.—Yes, because in the place of a very rough bottom, the misplacement of the crib by even a few feet from the position it was intended for, might destroy its fits entirely, depending how the bottom happens to be at that point.

Q.—Apart from the question of soundings, in order to give an exact idea of the contour of the bottom, and shaping the crib, its bottom accordingly, and of course, placing it at the place for which it has been shaped, is there any other precaution necessary in the separation of the cribs. What about their alignment?

A.—It is extremely desirable, and more than that, I think it is quite important that the cribs as they are placed, should be in close alignment, as closely as possible. I do not think that is essential, that is, precise alignment is essential, providing the cribs go into the position they were intended for, but naturally in designing a cofferdam and trying to construct it, the effort is made to get a reasonably straight line from the upstream face as the cribs are sunk.

Q.—You consider the adaptation of the bottom more important?

A.—Yes.

Q.—What about their proximity to each other?

A.—They should be sunk as closely to each other as it is practicable to do so. I should think in most cases that the sides of the cribs should be fairly true and straight It ought to be possible to get them down within a foot or so of each other.

Q.—As a matter of fact, you have seen the cribs in location in the cofferdam up there?

A.—Yes, I saw them in October, and when the construction of the cofferdam was complete, and in July when some of the cribs were in position ; not all of them.

Q.—What have you to say about the way these cribs were built and placed?

A.—Well, they were badly aligned, and there was a considerable distance between some of them. Some of them were tilted altogether from the downstream side, which was the only side then visible in October. It was rather a bad looking situation.

H. S. FERGUSON (for Defendant) Examination in chief.

Q.—Would you look at Exhibit D-10, which purports to show a survey by the Quebec Streams Commission, and which we hope to prove later.

Mr. St. Laurent:—Exhibit D-10 was filed under reserve of the defendant's intention to prove it, and it has not yet been proved and I object to any reference to it for the purpose of showing the position of the cribs, because the witness who filed it did not prove it.

By Mr. Geoffrion:—

Q.—I am asking you to assume for the purposes of your testimony, that we will prove the accuracy of this plan. If we do not prove it, then, I have given you an incorrect plan, that is all. I want you to look at this plan from the point of view of the location of the cribs of the upper cofferdam. You notice the south abuttment?

A.—Yes.

Q.—Crib No. 2?

A.—Yes.

Q.—Would you call that a good alignment?

A.—Oh no. There is indication that the upstream face of No. 4 and No. 3 cribs are nearly fifteen feet upstream, from the upstream face of the abuttment.

Q.—Dealing with the sheeting problem, from the south abuttment to crib No. 4, would that irregularity create a difficulty for having a compact sheeting?

A.—No, not necessarily — no, I do not think it would necessarily, that particular place there ; it should be possible to carry the sheeting around it.

Q.—At a distance around it ?

A.—Oh, it would increase the distance.

Q.—You could not put your sheeting right on to the crib, could you?

A.—That depends upon the condition of the face of the crib?

Q.—What do you mean by the condition of the face of the crib?

A.—If it was smooth enough to permit sheeting to be laid upon it and supported by it, I do not see any reason why it should not be.

Q.—Would you explain how you would connect it there?

H. S. FERGUSON (for Defendant) Examination in chief.

A.—Assuming this to have been the sheeting to be carried out on the upstream face to this outer end, there should be something between these two cribs to fill that gap of perhaps four feet between them, and I would carry the sheeting right around the face.

Q.—Your sheeting would be at right angles?

A.—Yes.

Q.—Therefore, filling the gap with something?

A.—There would have to be timbers put down there and backed up in place, that would form a continuous face against the south abuttment against which to place the planking.

Q.—What distance is that?

A.—It appears to be about four feet.

Mr. St. Laurent:—I renew my objection to this evidence. Our information is that this will not be the correct thing. This was a composite plan made under Mr. O'Shea's instructions. We have seen the Quebec Streams Commission's and this does not tally with it.

His Lordship:—I will reserve the objection.

By Mr. Forsyth:—

Q.—What does that distance scale?

A.—About six feet. The distance between the outer end of the outer abuttment and the nearest side of crib No. 4 scales about six feet.

Q.—On this plan.

A.—On this plan.

By Mr. Geoffrion:—

Q.—Between crib No. 3 and Crib No. 4 there is perhaps a slightly lesser distance?

A.—At the upstream end it scales perhaps nearly six feet, between five and six feet, and at the lower end about four feet.

Q.—I am instructed that crib No. 3 did not get where it was intended. Crib No. 2 would be on the other plans. It did not get to where it was intended through the breaking of a line or something. You have already commented on the result of that as to the point of view of fitness to the bottom. It is practically in line with the other?

A.—It is quite close in line with No. 4 on this plan. No. 3 and No. 4 I should say are quite closely in alignment.

H. S. FERGUSON (for Defendant) Examination in chief.

Q.—I will skip over crib No. 1. Assuming that is indicated as placed correctly there, what have you to say as to its location connected with the north abuttment?

A.—It is entirely out of alignment with the north abuttment. Its sides are at quite a wide angle with the direction of the sides of the south abuttment and the other cribs. It would appear that the crib was where it was not intended to be.

Q.—There is also a big gap there?

A.—This plan indicates a gap of approximately twelve feet between the north abuttment and the nearest side of crib No. 1.

Q.—This leaves us with a big gap between crib No. 1, and what is called here crib No. 3, and it is also called crib No. 2. What sort of shaped crib would you have thought should have been put to fill that gap?

A.—If that was the final closure to be made...

Mr. Forsyth:—But it was not. No. 4 was.

Witness:—Or if that was a closure that was to be made.

By Mr. Geoffrion:—

Q.—Assuming No. 3 and No. 1 to be in place (and No. 3 is called elsewhere No. 2, the one which did not go into place) how would you shape the one that comes in between there?

A.—I should endeavour to shape the crib that was to be placed between them so that it would conform to the shape of the gap between these two cribs, No. 1 and No. 3, which would be possibly making it in two cribs or one, depending on how difficult it would be to handle a second crib of a given size in the river.

Q.—And it would have wedged in?

A.—Yes, it would have wedged in.

Q.—As to the location where it is there, what have you to say about it, where it happens to be, the one marked crib No. 2?

A.—The lower end of crib No. 2 on this plan, is almost twenty feet downstream from the upstream end of the adjoining cribs showing that in some manner it went further downstream than it was intended to go before it was finally landed and fixed into position.

Mr. St. Laurent:—If it is intended to go on interpreting this plan, we wish to renew our objection. There is a plan that

has been put in and has been stated under oath to be in accordance with the actual placing of these cribs. Our information is that this one is incorrect, and it has not been proved.

His Lordship:—If that plan is inaccurate, we are simply wasting time.

Mr. Geoffrion:—I am informed it is accurate. I suppose my learned friend is quite entitled to have it proved.

Mr. St. Laurent:—As a matter of fact this plan does not purport to be a Quebec Streams Commission's plan at all. It purports to be a plan approved in February 1932, and completed in February 1933.

Mr. Geoffrion:—Quite so.

Mr. St. Laurent:—It could not even serve to prove the Quebec Streams Commission's operations. It is something which Mr. O'Shea stated that he gave instructions to have copied in from various sources. This would only be secondary evidence. This witness designed the work, and he is the chief critic I presume, of what was done by the plaintiff, and we submit that the evidence made by the witness should be upon something better than D-10 at the present time.

Mr. Forsyth:—If I may submit this in addition ; to cross-examine this witness on a plan that is not proved to be accurate is a waste of time, and I submit if he is going to be examined, he should be examined on something that he can be cross-examined upon.

Mr. Geoffrion:—My submission is that your plan is inaccurate and I do not intend to examined him on your plan. If necessary, although it may be some little inconvenience we will have to bring the officials of the Quebec Streams Commission to prove the plan.

Mr. St. Laurent:—P-37 and P-38 are taken from the Quebec Streams Commission's plan. We have the people who produced the plan and made proof of it, but here, we have not even seen the man who drew the plan. We heard Mr. O'Shea who said he gave instructions to have this plan prepared, but he

did not vouch for anything on it. That is all we have at the present time.

Mr. Geoffrion:—Perhaps we could adjourn until this afternoon and telephone to Quebec in order to have the Quebec Streams Commission's man here. I do not deny you are entitled to it. It is just a matter of convenience. I am quite willing to do that.

Witness:—May I be permitted to make some corrections of some figures I gave off the scale.

By Mr. Geoffrion:—

Q.—What is the correction you want to make?

A.—Owing to becoming confused in the scale I used here, I think I gave some of these distances between the cribs incorrectly. I think I told you that the distance between the face of the south abuttment and crib No. 4 scaled six feet. It scales one half that distance, three feet. Similarly, I think I told you that the distance between the face of the upstream and downstream ends of cribs 3 and 4 on this plan, scaled six feet and four feet. Likewise, they scale three feet and two feet, one half of that distance.

I think I testified that the downstream face of crib No. 2 on this plan is twenty feet below the downstream faces of the adjoining cribs. That was correct.

By Mr. Forsyth:—

Q.—What about the upstream face of No. 4 crib?

A.—I think I told you that the upstream face of No. 4 crib projected upstream from the face of the south abuttment about fifteen feet. That happens to scale twelve feet. I think that is all.

By Mr. Geoffrion:—

Q.—Well Mr. Ferguson, there has been a slight loss of time, but I will take you back another plan, P-37, and ask you to assume that this one will represent it more correctly. Is this to scale?

A.—Yes.

Q.—There, apparently, the south shore abuttment, and the south corner of crib No. 4 would be in closer alignment than the other?

A.—Yes, they are.

Q.—What would be that difference?

A.—The adjacent upstream corners of crib No. 4, and the south shore abuttment are separated by a little more than two feet in measuring across the stream, and also about two feet measuring up and down stream.

Q.—Would that be considered by you a good or bad alignment?

A.—Well, not very good, but not serious.

Q.—The gap would have to be plugged as you said?

A.—Well, it must have been filled before they could plank.

Q.—It is in evidence that crib No. 2 did not go where it was intended. Crib No. 4 was placed after it (and when I say crib No. 2, that is what we now call No. 3, but No. 2 on this plan)?

Witness:—Did I understand that crib No. 4 was the last crib placed?

Counsel:—No, it was placed before.

Mr. Forsyth:—The dates are on them.

By Mr. Geoffrion:—

Q.—Yes, crib No. 4 was the last one placed of the two.

A.—Apparently then, when crib No. 2 was placed, its upstream face was not in line with the abuttments by about the feet, and crib No.4 was then built after having its upstream face designed to correct the alignment between them, being the last crib placed. I should think that would have been the proper thing to do.

Q.—We have here a couple of feet again.

A.—There are about two feet between cribs 2 and 4.

Q.—Forget for the time being crib No. 5. What have you to say about crib No. 3, as to its dimensions at that time when it was brought down. Cribs Nos. 2 and 1 went away there ?

A.—Horizontally, the dimensions of crib No. 3 are twenty-feet in width, thirty feet in depth. I mean by depth, its dimensions measured in an up and down stream direction. Its width is, as I have said, 22 feet, and the gap which it was apparently intended to fill, the width is 34 feet.

Q.—What do you say about it?

A.—Well, that is not a close fit. There is a difference of 12 feet, approximately, between the width of the crib and the width of the gap it was intended to fill.

Q.—How should that crib have been built?

A.—It seems to me it should have been built of such dimensions that it would as closely fill the gap as the builder thought it was possible to introduce the crib into.

Q.—Crib No. 5 covered it up when it went down first, close to that objective?

A.—Well, it appears that crib No. 3 was landed and was much further downstream from the location it was intended for, that another crib, No. 5 here, was able to fill the gap between the upstream face of crib No. 3 and the adjoining sides of cribs Nos. 1 and 2.

Q.—What have you to say about crib No. 1? Apparently it fits; or, No. 5 fits it fairly, but as regards the north shore abuttment?

A.—There seems to be no particular designed relation between the position of crib No .1 as it stands there and the north abuttment.

Q.—It is lower down the stream?

A.—It is lower down the stream, and the adjoining faces make an angle with each other, which is quite wide.

Q.—I suppose that gap is not very deep?

A.—From my recollection of the contour map of the bottom, I should say it was fairly deep at that point.

By Mr. Forsyth:—

Q.—Where?

A.—At the gap between the face of the north abuttment, and the north face of crib No. 1.

By Mr. Geoffrion:—

Q.—Take the openings on the other side of No. 5, were these easy to fill?

A.—It does not seem to me there ought to have been any great difficulty to fill those spaces between those cribs.

Q.—Take the four first spaces, south of 4, south of 2, and south of 1?

A.—As I have said, the distance between the south abutt-

ment and No. 4 is a little more than two feet, and it ought to have been comparatively easy to fill that.

Q.—Does that apply to the others?

A.—The others are even less, except the distance of the north side of crib No. 1 and the north abuttment.

Q.—What about that gap?

A.—That gap varies from a width of nearly twelve feet at the upstream face of crib No 1, to a width of about four feet at the downstream face of crib No. 1.

Q.—That would almost call for a small crib of itself?

A.—Yes, although I suppose the policy would have been to attempt to fill that with timbers and back them up with rock.

Q.—With a crib of that sort, would the sheeting problem have increased in difficulty to make a good sheeting?

A.—In my opinion.

Q.—Suppose also there had been no filling in the bottom in the way indicated, and the possibility of there being gaps under the cribs at the bottom would that also affect the question?

A.—Yes, if the planking on the face of the cribs, was placed on the face of the cribs, or wherever it was placed, if it was not fitted at the bottom, there doubtless at places would be gaps between the ends of the individual timbers or planks in the rocks or boulders or projecting pieces or bottom on which it rested ; it would have to be eventually filled in with something to prevent leakage.

Q.—What is the usual preliminary when you come to sheeting ?

A.—There are several ways, the first naturally depending on the particular conditions and the depth of the water in which the coffer is being built. I think the usual way would be to start from one or both ends of the cofferdam near the shores, fit each plank to the shape of the bottom, driving it into the bottom if it is possible, fitting it to it quite closely if it is not possible, to drive it into the bottom and fasten it. If the water is deep, use a diver for that purpose so you can fit it.

Q—When the water is deep, is a diver used as a matter of practice?

A.—Yes, that is a very usual practice.

Q.—Suppose, in this case. the interstices between the cribs had been filled, as you said they should have been, and could be, was there any difficulty about a diver going down there?

A.—They could be filled so there would no such difficulty.

Q.—It has been suggested that there were logs that were

not removed, because they were caught in the cribs. Suppose these cribs had been closely fitted and shaped to the bottom, could any logs have been caught in them?

A.—I think it is very unlikely that it they had been fitted closely together into the bottom, that logs could have got fastened in the spaces between the horizontal timbers forming the cribs, or at least, have become so fixed that they could not have been fished out and taken away from there.

Q.—What about the possibility of pulling out logs? What method do you employ?

A.—They might be grappled for with grappling irons, or an endeavour might be made to get loops of nooses with lines around them and attached to a derrick, and draw them out, There have been various expedients tried.

Q.—What do you think of the merits of trying an orange peel?

A.—An orange peel might possibly have taken some of the logs out. I don't know whether all of the logs would be in a position where the points of the buckets could surround them and get a grip on them.

Q.—With respect to removing the logs, supposing the condition was this that Bishop says, as apparently he does, his wooden sheeting was supported by struts beyond the point where the logs were interfering, and with the gaps filled between the cribs, could a diver have been safely used for that work?

A.—I would like to answer it this way, that if it so happened that the current due to leakage between the cribs, and the current was so swift that they could not use divers, it could have been reduced possibly by putting planking part way down on the faces of the cribs themselves. Various expedients could have been adopted to reduce the current to a point where it would have been safe to have sent a diver down.

Q.—If the cribs were filled and sunk, or, if the cribs between them were filled. would there be enough current for a diver to follow the sheeting...

A.—It seems to me it would have been possible for a diver starting from the shore to keep behind the face of the sheeting sufficiently to be protected from any local swift current; it would have been possible for a diver to proceed behind the face of the sheeting already driven — I mean, on the upface side of it, and thus protect himself from any current or suction through the cribs; in other words, starting from the shore and building the sheeting out plank by plank; it seems to me it could have been possible for a diver to follow that along.

Q.—If the spaces between the cribs had been filled, would the position have been different...

A.—If the spaces between the cribs were filled, and the cribs themselves were filled, it would reduce the quantity of water which would flow through the rock filling to a point possibly where a diver could have been used.

Q.—Was there any reason, with proper cribbing as mentioned, that the divers work could not have been as safe as any others on the work?

A.—I cannot say that at places the current would not have been more swift, but I do say that in those places, by various expedients, one of which would be driving planks down on the face of the crib itself, the current could have been reduced to a point where a diver could have been used.

Q.—What purpose is a diver used for?

A.—To fit the planking to the bottom. Usually the method would be for him to follow along...

Q.—Oh, pardon me before coming to that. The by-pass at that time was not excavated the full width, or only to something less than half its width. Would that increase the pressure of the current against the crib?

A.—Yes. The narrower the by-pass channel, naturally the higher the level of the water would be in the pond above the cofferdam for giving flow down the river.

Q.—Would it be appreciable?

A.—It would be substantial. I could not say how much.

Q.—Coming back to the question where I interrupted you, as to the shaping of the crib. What should be done as a matter of practice to shape the sheeting at the bottom?

A.—The method would be to drop each plank down; if it were rocky bottom, drop each plank down and with a diver mark the bottom of the plank so that its end would be cut and chamfered, to know the surface of the rock against which it was to be driven; have it taken up and cut to that marking; put down again and driven against the surface of the rock or boulder, or whatever it was, and then the diver would nail or fasten the bottom of the plank, and the men above would fasten the top, then, plank by plank, that method would be proceeded with right across the river.

Q.—Would the numerous soundings you suggest have revealed the ledge of rock or over-burden?

A.—It seems to me they would have.

Q.—Would the diver have found out anyway?

A.—Yes.

H. S. FERGUSON (for Defendant) Examination in chief.

Q.—Supposing, in his diving, he discovered an over-burden that was leaky or porous, what should be done?

A.—In the first place I don't know how he could discover that to be a fact. He might discover the bottom of the river covered and strewn with boulders or large cobbles, which naturally found their way between the fine material which had widened out under it. He would not know whether the material that was there was tight or open, but assuming he did find this layer of boulders, or open material, on the surface of the river bed, it ought to be removed adjacent to the line of the planking.

Q.—But outside of the sheeting above stream?

A.—Yes, enough so the sheeting could be carried down below the surface of the river bed to the same distance at least.

Q.—That would be a matter of dredging a narrow cut across the river?

A.—Dredging, yes.

Q.—Is an over-burden of that sort necessarily leaky?

A.—No, I do not think it frequently is. I have never seen it so, except the surface layers of boulders and cobbles that you always find a river bed strewn with, particularly in rapid water.

Q.—Apart from those boulders

A.—What is underneath that surface layer, we will call it, boulders and cobbles, is usually, in my experience, found to be quite impervious material.

Q.—Over a long period of time with a very swift current against material that is leaking like that, is it likely to remain there ?

A.—Not fine material.

Q.—Did you notice from the photograph that the sheeting started to spread at the sides and connected in a "V" shape the sheets, and then made towards the middle of the river, diverting as they go upwards?

Mr. St Laurent:—I might suggest that my learned friend divides his question.

Witness:—I do not recall when I was there having observed that particular fact, and neither do I recall having seen it on the photographs.

By Mr. Geoffrion:—

Q.—I will ask you to assume for the purpose of the question : what would that indicate as regards the water-tight character of the planking of the sheeting?

A.—If in the plane of the line of planking, the adjoining planks incline with relation to each other, it would mean inevitably that there were gaps between them, either near the top of the planking or at the bottom, depending on their inclination.

Q.—If there is a "V" upwards, there would be an inverted "V" somewhere below?

A.—There would have to be.

Q.—In other words, if they start straight and not slanting, there would be a moment when the lower ends will separate?

A.—Yes, providing the edges of the plank are parallel — providing the two edges of each plank are parallel to each other ; the individual planks must be parallel to each other in order to adjoin.

Q.—I understand you were up there after the cofferdam had been put in?

A.—Yes.

Q.—While it was still leaking?

A.—Yes

Q.—Did you notice in any way how the water came through?

A.—I observed on October 1st, I believe, a large amount of water coming through the crib work at the downstream face of the cofferdam, not far from the north shore ; there was visible leaking I recall, nearer the south shore, but practically small, or small as compared with the amount of water issuing from the lower face of the cofferdam near the north shore.

Q.—The main leaking was north?

A.—Well, at least it became visible running through the timbers, between the downstream face of the crib work near the north shore.

Q.—Can you tell us whether it came through the timbers, or under?

A.—It became visible issuing from the spaces between the timbers.

Q.—Did you make any remark, or notice anything open to criticism in your view, in respect of the toe fill?

A.—The toe fill was substantially completed when I was there, and there was really nothing that I could see to criticize about it. There was a very large amount of material deposited on the upstream face of the dam, the top forming quite a good sized embankment of earth, retained by the planking.

A suggestion was advanced while I was there, that the leak was due to an open strata of material beneath the bed of the river, and that the water was sinking down into that stratum from some point upstream above the limits of the toe filling and passing beneath the cofferdam, and issuing below, and I made the suggestion that some more toe filling be put on the top of the bottom of the river, if they believed that to be the fact that it ought to reduce that leakage, if that were the fact.

Q.—What was your view from your observation in respect of that theory ?

A.—I did not believe it were possible that that could be the fact.

Q.—What have you to say of broken rock thrown into a toe fill ?

A.—Well certainly, broken rock would not be impervious, It would permit water to go through it quite freely.

Q.—Could it be cured by throwing earth over it ?

A.—It might be if it were covered on all of its sides, but if there was a point at which water could reach the rock at any place, it could pass through it. I mean supposing there was a pile of rock against the planking that was perhaps out in the center of the river, if that were entirely surrounded with toe filling of sufficient thickness, that water would not go through it itself. That might prevent it from doing any harm. If that pile of rock was on the shore reaching from, we will say, the planking to some point upstream, and the toe fill was filled against it, I believe that water would not pass through that rock fill to the face of the planking.

Q.—I suppose you knew of the steel sheet piling driven, as shown on this plan P-37 did meet the difficulty and stop the main leaks sufficiently to unwater the river. You have been told that.

A.—I have been told that after this sheet piling was driven, which was sometime after I visited the dam, that it reduced the leakage to a point where the pumps could comfortably handle whatever leakage remained, and there was no further difficulty in unwatering the space between the two cofferdams.

Q.—Did you notice that sheet piling apparently covers only the north part of the river and is not closed on the sides ?

A.—Yes.

Q.—Will you look at exhibit P-38, which purports to show (from Plaintiff's observations) the levels at which the

sheet piling was driven, and considers also the depth of the river where the cofferdam approaches the north shore, and will you tell us whether you have any comment to make in respect of the theory that the water leaked under the dam through the overburden, in view of the fact that this sheet piling stopped the main leak?

A.—The plan you have objected to does show that piling, if that is correct.

Q.—The location of it, or the depth?

A.—The location of it horizontally.

Q.—The sheet piling is about twenty feet above the highest levels marked ledge?

A.—That is just what I was trying to determine.

Q.—It has been stated to be about twenty feet higher. The sheet piling goes into the river a distance about twenty feet higher than the upper levels taken by Stratton?

A.—That is, this location is twenty feet upstream about.

Q.—About twenty feet upstream?

A.—From the line of levels shown on B-2444.

Q.—At point 'K"?

A.—As running from "K" to station 4.

Q.—You can take it, to simplify the matter, that from the evidence the sheeting extends approximately to the distance shown on P-37 and passes opposite the levels taken by Mr. Stratton near the north side, about twenty feet upstream, and crosses the deep cut that is shown in the river near the north shore?

A.—Plan B-2444, which I have here, indicates that there is a deep channel near the north shore of the river, which is quite narrow (I mean that the channel is quite narrow), the deepest point of which is given on this plan as elevation 72.7. Twenty feet south of that point the elevation is given here as 82.9. Twenty feet north of that point it is given as 73.7, and from that point north the bottom rises very abruptly until only ten or fifteen feet away from it, it comes up above the surface of the river.

I merely mention these figures to indicate the approximate width of this channel, and its approximate location, which is quite close to the north shore.

Going upstream from this point, the river rapidly widens and becomes deeper, as indicated by the line of soundings taken across the river about ninety feet further upstream.

This drawing, P-38, showing the depths to which the steel and wooden sheet piling, which has been referred to, were driven, indicates that the bottom of the deepest pile driven, was at elevation 71.2.

I do not quite understand what the significance of two elevations which are given on some of these steel piles here under the bottom of some of the piles, is, indicated by that full line, and the elevation is given on it. Every foot further down in some cases, a bottom elevation is indicated by a dotted line.

I understand now, having just had my attention called to a note on the drawing which explains that these differences are the points to which the particular piles were driven by a small hammer, but in any case the lowest bottom elevation indicated here is 71.2.

Taking an average of the depths to which the piles were driven for a distance of perhaps forty feet across the deepest part of the channel, in my judgment the average elevation to which they were driven would be somewhere between elevation 73 and 74. In fact the elevations of the piles, driven within this distance vary all the way from the deepest point, 71.2, which I have mentioned, to the highest point 78.3, within the deepest part of the channel.

This indicates to me that few of these piles were actually driven into the river bottom. Those of which two elevations are given for each pile, may have been driven into it to that extent. They probably were. Those adjoining them where only one elevation is given, I doubt if they were driven into the river bottom very far, if any. This would indicate to me and confirm my belief that these piles did not cut off any stratum or porous or impervious material existing below the original river bed, and that the greater part of the leakage which altogether stopped, that this sheet piling finally reduced, originated at or about the bottom of the river bed.

In other words, the sheet piling not having been driven into the river bed, there could not have been nine to fourteen feet of porous material below that point through which the water was passing under the cofferdam.

The fact that these piles did cut off and merely reduce the leakage, reduced it to the point where the pumps were capable of handling the situation, certainly, it is obvious that that leakage occurred at points above the bottoms of these piles.

Q.—Did you see below the cofferdam any of the material that was found there, when you went up?

A.—Yes, I did.

Q.—What did you observe?

A.—While I was there, the pumps were operated for a part of the time, and the water level between the two cofferdams was lowered by the pumps two to three feet. I believe Mr. O'Shea has testified here it was lowered from the elevation of about 93 to about 90.50. At that time when the water was down to that point, earthy material was visible all the way across the river at the downstream face of the cofferdam. In other words, it was possible to walk on this material, as I recollect it, practically all the way across the river, on the surface of this material, the surface of which must have been higher than elevation 90 in any case.

At points where the original river bed was certainly meeting up below elevation 90, varying all the way from 73 to 83, this proved conclusively to my mind that the material I saw there had almost entirely, if not entirely, come through and washed through the cofferdam and deposited there.

Q.—From where?

A.—From material which had been filled upstream from the cofferdam, which had washed through gaps between planking or under planking, or in some manner through imperfect sheeting, came through the cofferdam, and had been deposited there. In other words, there was a large amount of material immediately under the cofferdam which certainly could not have been there at the time the cofferdam was built.

Q.—Your suggestion was, that a part of the toe fill was being washed through the cofferdam or between the planking or under the planking?

A.—Obviously this material came through the cofferdam at the time this material was used, and came through the cribs.

Q.—That was the only conclusion you could come to?

A.—It was the only conclusion I could come to, because it certainly could not have come there before the dam was built.

The elevation of the surface of it was anywhere nine to ten feet higher than it was originally.

Q.—Was anything done to test its consistency?

A.—Yes. While I was there Mr. Bishop told me that they said they had found a great depth of soft material, of leaky material on the bed of the river where he had outlined B-2444, reported rock, and he demonstrated that. He called over two of his employees to bring a steel rod, I believe it was. They went out with this material I have been talking about and quite easily churned it down into this material, I should judge, about six feet. It was very soft, fine material, without any rock of substantial size in it.

Q.—Do I understand you to suggest that you base your view as to its origin from it consistency, and its level?

A.—Yes, from its appearance, and from its elevation as compared to what the elevation of what the river bed was at the time before the cofferdam was built there.

Q.—What is the elevation of it.

A.—The elevation of the surface of this material, of course, varied, going across the river, but certainly none of it was lower than elevation 90.

Q.—And some above?

A.—Some a little above that. I would like to add there, that of course, the bottoms of the cribs, if they were down on the original river bed, must have been at an elevation considerably below the surface of this material I am referring to, and the water I saw issuing from the downstream face of the cribs naturally came through between the timbers which were above the surface of this material.

Q.—You saw water coming through the cribs even above the surface of this material?

A.—Well, that was the only place it was visible.

Q.—And the cribs went up above the material?

A.—They must have. There is an elevation as deep as 83.7 to which the cribs must have approximately gone, whereas the surface material must have been near 90.

Q.—You were called to Cedars on the 1st of October on account of that unwatering difficulty?

A.—I was.

Q.—You came up?

A.—I came up.

Q.—You spent two days there?

A.—No. I spent one day at the dam, and part of the following day at High Falls.

H. S. FERGUSON (for Defendant) Examination in chief.

Q.—I am trying to shorten this examination. There has been correspondence filed between you and Mr. Bishop about what happened at that conversation. You stated then your understanding of the interview and of what happened there?

A.—Yes.

Q.—And you stated it in your letter of October 7th, exhibit D-3, a few days after?

A.—Yes.

Q.—Do you remember that letter?

A.—I remember the letter.

Q.—Have you seen it recently?

A.—I have seen it recently.

Q.—Does it correctly state, according to you, what happened at that conversation?

A.—Yes.

Q.—Your memory was fresher then than it is today?

A.—Well, that was written shortly after I returned from a visit to the dam. I think I was at the dam on October 1st, and I spent October 2nd at High Falls, October 3rd in Buckingham, and October 4th I think I arrived at New York, and within a day or two I received a letter from Mr. Bishop to which this letter replies.

Q.—It contains the truth to the best of your knowledge?

A.—Yes, I am certain that that letter gives a fair resume.

Q.—Did you give Mr. Bishop any orders?

A.—No, I did not. Whatever I suggested there, I offered as suggestions.

Q.—Who gave you the facts for the purpose of giving those suggestions? Who facts did you take?

A.—I think about the only people I talked with on that trip up there, was Mr. Bishop and Mr. O'Shea. He went up there with me, and whatever facts I got, I must have got from either one, or both of them. I do not recall talking much with anybody else up there at that time.

Q.—At that conversation there was an agreement that you would have core drilling done?

A.—Yes.

Q.—And they were not put down?

A.—No.

Q.—Will you tell us why. Explain it.

A.—I got back to New York, and it seemed to me it would take so long to get core drilling machinery up there and get the results. We had some men going up to Buckingham to make some

investigation of the rock levels by the electrical method, which would be a quick way of sending them up there, in an endeavour to determine approximate elevations of rock by that method, so I sent them up there.

Q.—Is that a safe method?

A.—It is not an absolutely reliable method, no. I have had experience with it in several cases, and have had very good results. Sometimes it fails when there are certain local conditions that produce resistances which they cannot count on, it does fail. In this case they told me that they did not consider the results satisfactory.

Q.—In other words, according to the reports your men gave you, it failed?

A.—Yes, and by that time it was so late they started to drive sheet piling, and I did nothing further.

Q.—The steel sheet piling had then been started?

A.—I think so, that is, at the time I found out what the elevations were, at least, it had started, or they had decided to drive them, and it seemed to me it was no use at that time.

Q.—The steel sheet piling cured the difficulty?

A.—I am told it did.

Q.—You were up earlier than that, were you not?

A.—I was at that dam during the latter part of July. I think it was July 25th, and then still earlier, I think, March 3rd.

Q.—On one occasion did you visit the by-pass excavation?

A.—I did. That was on March 3rd when I went up I believe, for the particular purpose of looking at the by-pass and the material in it.

Q.—There was difficulty concerning the hardpan claim?

A.—Mr. Bishop had waived the question of being allowed something for what he considered to be hardpan.

Q.—That he should be allowed something for that?

A.—He had considered that he should be allowed something extra for that, and I went up there really to look at the situation, to see what it was like.

Q.—And you looked into that situation?

A.—Yes.

Q.—What was your conclusion?

A.—My conclusion was it was not hardpan that was being excavated there. At that time the excavation of the entire channel through the by-pass had not nearly been completed. As I recall it they had excavated down the grade from the downstream end of this channel, perhaps fifty or sixty feet up the river, and

from there on it was in a partial stage. I don't know that at that time the width of the channel where they had got down to grade was as wide as it was eventually made, but I had a very good chance to see, at least, the nature of the material on the sides of the cut that they had at that time made of the bottom of the cut.

Q.—Could you also see the bottom of the incomplete excavation, or did they only strip the surface?

A.—Yes, I could see that also.

Q.—Was that in winter?

A.—I believe that was on March 3rd.

Q.—Are you able to tell us whether that earth or cement, whatever it is, at that season, was impervious to water, or whether water flowed through it?

A.—The bottom of the cut where it was down to grade was quite wet, as I remember. I do not think there was any great amount of water running through it, but it was wet. Some of it may have been from snow or ice that was thawing and running down in there, because it was fairly mild, I believe on that day, and some of it may have been seepage through the gravelly material from the river above.

Q.—You cannot say?

A.—No, I cannot undertake to say where it was, but there was a very small amount of water running through there.

Q.—Is hardpan generally impervious or not?

A.—I consider hardpan would be pretty impervious material. Yes, I should call it so.

Q.—I want to deal now with the rock excavation. A great deal has been said about the advisability of core drilling as a means of curtailing the quantity of rock excavation. Can you give me any opinion of that, based on the experience you have had ?

A.—It usually results in diminishing any excavation which would otherwise have to be done.

Q.—Have you had any experience in that respect in connection with the Masson Dam?

A.—There were some core drilling made at the site of the Masson Dam, but in spite of that, there were places where the excavation had to be taken down considerably deeper than it was expected to go.

Q.—Have you any idea of the over-run in your observation there?

A.—No, I would not undertake to give you any figures about it.

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—The manner of excavation and the way it was conducted was in the hands of the Quebec Streams Commission?

A.—Entirely so.

Q.—You were not there, and you did not follow it?

A.—No. Whatever rock excavation I saw in progress was only on the three days, I mentioned. I do not think there was rock excavation going on all of those three days either.

Q.—Is there any rule or given circumstances in respect of the depth of the slices of the rock to be taken at a time ?

A.—In preparing for the foundation of a dam on rock, the depth to which the individual layers should be taken, of course, vary somewhat with the particular circumstances, but great care must be taken at all times not to shake up rock below the point at which you would like to go with your foundation and shatter it. If you shatter rock where you intended to go, it must be taken out.

Q.—That is a matter for the judgment of the Engineer in charge of the soundings and of the solidity of the work?

A.—I consider it so.

Q.—So that is why Mr. Lefebvre and his assistant were there?

A.—Yes.

Q.—Can you tell us whether the dam as originally built was changed?

A.—I think there were no changes.

Q.—Was there any change made with regard to the toe....

A.—That was a slight addition I knew nothing about. They thought it had to be done.

Q.—But otherwise changes were not ordered, it was built according to design?

Cross-examined by Mr. Forsyth, K. C., of Counsel for Plaintiff:—

Q.—At the outset of your examination you stated that you had two employees on this work, Mr. O'Shea and Mr. McIntosh?

A.—I think I referred to Mr. O'Shea, but not to Mr. McIntosh. He was indirectly in my employ, I suppose.

Q.—And he was the person who employed Mr. Stratton?

A.—Well, he was in my employ.

Q.—You have stated that you did not think that core drilling would diminish the rock excavation. There is one thing that is fairly certain, is there not, that core drilling would indicate to you whether you had to go by short lifts or not.

A.—Not necessarily. In some places it would so indicate and in other places it may not.

Q.—But the odds would be in favor of core drilling, using the depth of lifts that you could take out?

A.—Oh, I don't know whether I could say there would be or not. I have seen a lot of core drilling done. I have never seen any cores even in the firmest rock come out in very long pieces. They usually break over one another, sometimes by grinding in the drill shop, sometimes by reason of the fact that there are a great many fine seams or planes of cleavage in any kind of rock on which a core may snap, so we seldom get cores of any great length, and when they come out in fragments, varying all the way perhaps, from several feet down to several inches or a fraction of an inch even, why, those fragments do not, all of them, indicate open seams, or seams of rock that you would have to take out. Sometimes you will have an open seam in which a drill will go through, and open seam in which there is a distinct separation between the face of the rock. In this case, that becomes apparent at the time the hole is being drilled, by the drill being dropped down. You have other cases where you go into a seam where there is a definite streak of mud or clay. That, of course, the drill will indicate, but where it goes from one plane of cleavage to another, a core may split there. That does not necessarily indicate that rock has to come out or that it must be taken out at that point.

Q.—Perhaps you will say this, that to have cores would be a useful thing when you are considering the depth to which you are going?

A.—Yes, I believe in many cases it is.

Q.—In practically every case it would be a useful thing, would it not?

A.—Well no, I would not even say that.

Q.—Well, perhaps you would say it would be no use in any case. Would you say that?

A.—No, I would not go that far. That would not be a reasonable thing to say.

Q.—Do you know anything about the rock under the non-spilling section of this dam?

A.—I saw that when it was being excavated. I have forgotten on which of my three visits there that I happened to see that. Yes, I saw that.

Q.—And it was full of mud seams?

A.—I saw mud seams there, and I saw a great deal of shattered rock on the sides of the cut they had made.

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—Core drilling would have been a good thing in that particular place?

A.—Doubtless in some places it would have indicated that rock would have to be taken out. At other points it would not so indicate.

Q.—Well, at that point, taking the mud seams away,it would certainly have indicated this, would it not?

A.—Wherever your core happens to go through a mud seam it would certainly have indicated that fact.

Q.—And I suppose you did think that core drilling would be a useful thing with respect to this cofferdam situation when you were up there on the October visit?

A.—I do not recall what my own feelings were about that. It was Mr. Bishop's request.

Q.—Let us see the correspondence about that.

A.—He said we must know where the rock was, and where the rock is, and that we ought to make core drillings, and I promised we would make them. At any rate, it was not suggested by me.

Q.—You thought that something would be useful there, did you not?

A.—I may have agreed with Mr. Bishop that it would be desirable . I won't deny that. Mr. Bishop had communicated there was something like fourteen feet of loose material between the bed of the river and the surface of the rock below the point where we had determined the elevation of the bed of the river, and he said we must know where the elevation of rock actually is now to prepare what we have got to do, and find out what the difficulty is, and I might have agreed with him that that would be a desirable thing. I won't deny that, and I promised to do it.

Q.—And did you do it?

A.—No, I have told you I did not, and why.

Q.—Why did you not do it?

A.—I told you. I told Mr. Geoffrion.

Q.—You did not tell me. Tell me?

A.—When I got home, I thought we could much more quickly get some results from the electrical method because we had men on the way up here.

Q.—This electrical method you have said is not always absolutely reliable?

A.—No, it is not.

Q.—Will you tell me whether the electrical method is recommended by anybody for the determination of the elevation of rock?

A.—It is not recommended where you have to have precision. It is a very valuable method for reconnaissance work. I happened to have that employed on my work on other occasions, where we have had occasion afterwards to put down core drilling, where rock actually is, and I found in most cases it has checked out quite fairly with core drilling.

Q.—Is it not a fact that the electrical method depends even for near accuracy upon the existence of some mineralized rock?

A.—No, it is not a fact.

Q.—Would you tell me what you consider reasonably accurate in determining the elevation of rock?

A.—Of course, that would all depend on what the purpose was.

Q.—For the purpose Bishop wanted?

A.—For this particular place I thought if we could get it within two, three or four feet it would be sufficient to indicate whether it lead us anywhere down to fourteen feet below the point it was expected to be, and I felt that by this method the chances were very good, that we could get it, and perhaps even less.

Q.—It did not work out?

A.—It did not work out. In deciding on employing that method I had no idea whatever of trying to evade, or turn in any improper information at all.

Q.—Oh, Mr. Ferguson, I am not going to suggest that you had any such desire?

A.—I suggested it was a perfect method of finding out what we wanted to know.

Q.—I do suggest that you sent up in the first place a man to take the levels who had never done a job like that before?

A.—He had done a similar job.

Q.—He did not seem to have?

A.—He did not, but he had.

Q.—All I can say is, that I think that makes it worse?

A.—Makes what worse?

Q.—The fact that he had been on a job before and did not know it, makes it a little bit worse, does it not?

A.—I think his memory had been pretty well scattered when he made that answer.

Q.—I think it had been pretty well scattered before he got up to Cedars, but that is a matter of opinion, I suppose. At any rate, he was using a method which he, himself, thought was not reliable up there. That is correct, is it not. You heard him say so.

H. S. FERGUSON (for Defendant) Cross-examination.

A.—I heard him say that he considered it for the purpose that he was sent there, that the method he used was sufficiently reliable. I heard him say that.

Q.—You also heard him say that he invented it?

A.—No, I do not recollect hearing that.

Q.—At any rate, whether he had been on another job before, and had forgotten it, or did not know it, he was your man you sent up?

A.—Yes sir.

Q.—And the next thing, when you wanted to get some elevation as to rock, you used a method that was not accurate within three or four feet as you well knew?

A.—That is true. That was true.

Q.—And the core driling would, at any rate, have been more accurate than that?

A.—Yes, that is true.

Q.—And core drilling was the thing that Mr. Bishop had suggested?

A.—Yes. That is what had been suggested to him, I believe and what I promised to do. I admit that.

Q.—The question I referred to about Mr. Stratton was this. At page 183 of his deposition I said: "I want you to be frank about this and tell me frankly that to attempt to ascertain with a sixteen foot rod at the end of a line, whether the bottom is ledge or not, is a hopelessly inaccurate way of going about it", and he said, "Yes sir".

A.—Yes, I think I recall that.

Q.—And you would agree with him?

A.—Yes, I would.

Q.—So that the only two efforts that were made to obtain the location of the elevation of ledge were, at any rate, not accurate measures?

A.—You are referring to...

Q.—I am referring to Mr. Stratton and to the electrical survey?

A.—Are you referring to Mr. Stratton's name particularly, or to this particular measurement?

Q.—I am referring to the way that he did that particular thing.

A.—That particular measurement where he had to tie a rope on the end of a sixteen foot rod could not have been accurate. He could very probably get closely to the depth of water, to whatever his rod landed on. He could get that with a fishing line with a sufficiently heavy sinker, but as for being positive there

was rock or solid ledge it was anchored on, I do not think he could tell unless, in soundings along on each side of that he found continuously on each side approaching that point, and which I think would be a fair inference on what he landed on, was rock.

Q.—You would agree with him that it was rather difficult to distinguish between a boulder and ledge when you hit it with a sixteen foot rod?

A.—Well, it is.

Q.—The plans were based upon the information which Mr. Stratton brought him?

A.—The design of the dam was.

Q.—And of course, this plan B-2444 is Mr. Stratton's plan so to speak?

A.—Well, it is.

Q.—Had you ever been up to the location before you went there on the 3rd March?

A.—No, I do not think I ever had.

Q.—And you went there three times, the 3rd March, 25th July and the 2nd of October?

A.—The 1st of October — yes, that is correct.

Q.—And the other persons of your office who had anything to do with this are first, Mr. Stratton who took these elevations, second, Mr. O'Shea, who was your representative on the job?

A.—Yes.

Q.—Do you lay claim to Mr. McIntosh?

A.—Oh yes.

Q.—He was your man too?

A.—Yes, but hired by Mr. O'Shea.

Q.—And paid by Maclaren?

A.—I think so, as I recall it. I believe so.

Q.—Who was Mr. O'Shea paid by?

A.—He was paid directly by me.

Q.—So that he had, at any rate, no obligation to anybody but yourself in his conduct of the work?

A.—Oh yes, I consider so. I considered that he was really representing the owner.

Q.—What I mean to say is, that his responsibility to the owner is the same as yours?

A.—Well, that is true.

Q.—So far as an individual had any responsibility, it was to discharge your responsibility to the owner?

A.—That is so.

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—You are not a member of the Professional Society of the Quebec Society of Engineers?

A.—It is what is known as the Association of Professional Engineers. No, I am not a member and I cannot be by the laws of the Province.

Q.—You can get a special license for each job?

A.—Yes.

Q.—Did you get one for this job?

A.—I do not recall. There was one job I did up here for which the license did not come until it was too late, through my ignorance. I paid for it.

Q.—The license in this particular case was issued, I believe on the 16th December 1929?

A.—It may have been. I was in the situation that I am a member of the Canadian Institute of Engineers, and at the time I joined the Canadian Institute, that gave me the privilege of practicing in the Province of Quebec. Later on it appeared that privilege was taken away.

And it now being 12.30 the examination of the witness was adjourned until 2.30 P. M.

And at 2.30 o'clock in the afternoon, on this seventh day of March, 1933, personally came and reappeared the said witness Hardy S. Ferguson and his cross-examination was continued as follows:—

By Mr. Forsyth, K.C.,—

Q.—You stated at the outset of your examination that a contractor cofferdamming a stream should first take soundings right across the bed, and I think you said he should a drag as well?

A.—No, I did not say exactly that, or I did not intend to convey that meaning. I meant at first he should make a survey across the river over the area to be occupied by the cofferdam, sounding at intervals sufficiently frequent to develop all the irregularities there were in the topography of the bottom, even to the extent, perhaps, of dragging the point of his rod over the bottom to discover those irregularities. Then, eventually, when he was ready to construct his cribs he should carefully resound the

area to be occupied by the particular crib he is to build, thoroughly developing the vertical projections in the bottom, and construct the form of his timbers in the bottom to fit as nearly as may be.

Q.—Just what do you mean by the topography of the bottom?

A.—I mean its contour and form or substance, and of what it consists.

Q.—How far apart do you think he should take his soundings, to ascertain the contour of the bottom?

A.—Of course, that would depend on how irregular the bottom is. But, as I have told you, he should take them very close together, and even to the extent of dragging his rod along the bottom from one point to another, to discover whether he went into a hole or not; and if he got a boulder or projection, or a point of rock, above the surface, he would carefully feel it out. That would be at the point where he was checking his measurements for constructing the bottom of the crib so that it would fit the bottom.

Q.—That, then, is the only really safe and reliable way to ascertain the topography of the bottom?

A.—I know of no other.

Q.—And doing it less carefully than that would not be reliable?

A.—It would not. I do not think it would be prudent.

Q.—I suppose he does that in order to be sure that he will have a crib there which will not slide downstream on him?

A.—Which will not slide downstream, or tilt, or bear on possibly two or three irregular points on the bottom, so that when it is ultimately loaded it will not slip down, or sidewise, or sink.

Q.—The purpose of the cribs, after all, is to get a firm anchor against which to sheath?

A.—Yes.

Q.—What was the velocity of the current in the channel at the point where the Bishop Company cofferdammed?

Witness:—Before the cofferdam was constructed?

Counsel:—Yes.

A.—I could not say ; but it was quite swift. I would not attempt to put it into miles per hour.

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—In any event, it would not be less than five or six miles per hour?

A.—I should say not, at those stages that occurred in the summer or spring.

Q.—Of course, as the different cribs were placed the velocity of the current at the apertures left would increase?

A.—Yes, it would.

Q.—And, materially so?

A.—Materially so.

Q.—I think you said this morning that the cribs themselves are not expected to be impervious to water?

A.—Not the cribs themselves, no.

Q.—I would ask you to look at the plan Exhibit P-37. I presume you will agree with me (and if you do not I know you will say so) that the line of the side of any one crib is the inside line, so to speak ? The logs overlap at the ends, and the upstream outside of the face log, for instance, will not establish the south line of crib No. 4, for example?

Witness:—Do I understand you to mean I would not take those lines as representing the cribs ? The outside line of the timber?

Counsel:—You may take them as the outside line of the timber, but the line would not be established by the projecting ends of the logs ? The outside line of the face of the timber — let me put it to you in this way : you have a log running up and downstream, and one running across the stream, and at the point where those two logs meet they are notched and there is an overlapping end?

A.—Yes.

Q.—The south line of the crib will not be established by the end of the log that projects across the stream, but by the face of the up and down stream log?

A.—I think I understand what you mean : that at the corners of the crib the logs would form the two faces at right angles and meet or cross each other at that point. The ends of those logs may project beyond the face of the log they cross. That should not be done. They should be cut off flush.

Q.—In this instance were they cut off flush?

A.—I could not say.

Q.—Looking at the positions of cribs Nos. 2 and 4 on the

plan, do you consider the space between those two cribs is unduly wide?

A.—No, I would not think the spaces shown there would be a serious matter in the construction of a cofferdam. They could be filled between, and the planking carried around.

The principle thing, it seems to me, is to get them reasonably close together, and to have the upstream faces of those cribs so constructed that each timber lying in that face, one above the other, lies in a fairly uniform and plane surface, so that when you sheath against it the sheathing will be supported by each and every horizontal timber in the face of the crib.

Wherever possible I think it is very desirable to use squared timber, at least for the upstream faces; and where it is not so possible certainly each timber as it is laid in the upstream face should be faced with an axe or an adze, so that when it is placed into the crib it will present a fairly smooth surface against which the planking is put. I have been told that was not done in this case.

Q.—Placing those cribs in the stream you would not expect to be able to put them closer than within two feet of the next adjacent crib, would you?

A.—It might have been difficult to do so, particularly as you got the last cribs in. It might be difficult to get them within a very close distance. It would all depend, of course, upon the current, and the guys, and the methods of controlling the crib and lowering it into position. Certainly in such a swift current as doubtless was there, when the closing cribs were put in there should have been very ample guys and cables running to the shores, attached to something, by which they could very closely control the movement of the crib and put it pretty closely to where it belonged.

Q.—But, you do not know whether that was done or not?

A.—I was not there. All I have seen are some photographs on which some attached cables appear.

Q.—Would you mind telling me again as to whether you see, between crib No. 4 and crib No. 2, crib No. 2 and crib No. 5, and crib No. 5 and crib No. 1, anything to criticize in the spaces between those cribs?

A.—There appears to be nothing I would consider serious in those up and down spaces

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—Would you mind telling me whether, nowithstanding what you suggest is perhaps not the best alignment of those cribs, assuming them to be no obstacle it would have been possible to sheath the faces of those cribs?

A.—If the face of each crib was constructed in the manner I described a few minutes ago, it would give a reasonably smooth plane surface, if each timber in the face was dressed or squared timber, and I see no reason why the planking could not have been carried across the faces of those cribs and supported by them. I see here it has not been done. I have no knowledge of why it was not.

Q.—When you went there, on October 1st, the false work had been built in front of the crib, the sheathing had been put on and the toe fill was there?

A.—Yes; that was the condition.

Q.—And, the ends of the sheathing projected some distance above the top of the toe fill?

A.—That is my recollection, but I am a little vague about it.

Q.—I show you a photograph (said to have been taken on November 16th, 1929) which shows a view from upstream of the dam, taken from the right bank. Would that be a fair representation of what the upstream face of the cofferdam looked like when you were there?

A.—I think perhaps it would be. I cannot recollect whether this planking, which evidently has been spliced as to height, was there when I was there.

Q.—In any event, the portion of it which is below the apparent splice was there when you were there?

A.—Yes, I have no doubt it was.

Q.—And, is your recollection sufficiently clear as to unable you to say whether this photograph is a fair representation of things as they looked to you when you were there?

A.—I have a very vague recollection of how the upstream side of that cofferdam appeared when I was there. I spent most of my time looking at the down stream side, and at the bottom of the river below it; but I did go out and look at the upstream side, and I looked at the filling, but I did not pay sufficient attention to it to fix the details in my mind. I am willing, however, to say this probably does represent the situation as it was there, except as regards the splicing — I do not know whether it was there then or not.

Q.—It may be that those portions of the sheating which

seem to show lighter than the others were put on after you were there?

A.—It may be. I do not know.

Q.—But, those portions which show dark...

A.—(Interrupting) I have no doubt they were there at that time.

Q.—Will you produce this photograph (subject to its being proved by Mr. Dubreuil) as Plaintiffs' Exhibit P-107?

A.—Yes.

Q.—You said that on your visit of October 1st you concentrated more on the picture below the cofferdam than you did on above?

A.—I did.

Q.—And, if I understood your testimony correctly this morning you intimated that on the date you were there the pumps had been able to so lower the water that there was visible a deposit of material across the portion of the river or directly below the cofferdam — right across the channel?

A.—There was earthy material there, that you could walk on. The top of it was above the surface of the water when they had pumped out.

Q.—And, it ran right across?

A.—As I recall, it did. There may have been a few little gaps in it, but the picture I have in my mind is it was extending substantially all the way across.

Q.—What was the elevation of the water that day?

A.—I heard Mr. O'Shea testify the other day that while I was there they pumped it down, I believe, to elevation 90.5.

Q.—So, this deposit you saw there clearly had to be above elevation 90?

A.—It must have been : whatever I saw.

Q.—And, you say it extended right across the stream?

A.—I say substantially so. There might have been short gaps through which I could see nothing.

Q.—You also said that proved conclusively to you toe fill was coming through the cofferdam ?

A.—Had been coming through.

Q.—If that state of affairs existed would it not also indicate that toe fill was coming through all the way across the cofferdam?

A.—That it had been coming through ; yes, it would.

Q.—So, if that condition existed, it did not apply more to the north extremity or the north side of the cofferdam than it did to the south?

H. S. FERGUSON (for Defendant) Cross-examination.

A.—That is true, with the qualification that I will not say the same quantities came through on the north side as on the south side. I do not know. The evidence that toe fill had come through the dam at various points across the river was there, and it was of the same character.

Q.—And, it came up to the same elevation pretty well across the dam?

A.—Very closely, yes. Of course, it was irregular.

Q.—You were not impressed that a larger quantity of this material, or a higher elevation of it, existed on the north side than there was on the south?

A.—No, not much. It was nearly at the same elevation, within perhaps two or three feet at the outside.

Q.—Of course, there is no question of the fact that you went up there particularly to look at the cofferdam, and to offer suggestions (as you say) as to how the difficulties they had there could be met?

A.—That is true.

Q.—And, the purpose of your visit was really to consider this cofferdam and the difficulties Mr. Bishop claimed to be encountering there?

A.—Yes.

I went up in response to a telegram which I received from Mr. Bishop a few days before that date, in which he urgently requested me to meet him personally at the site of the dam to consider a serious situation which had arisen because of having found 14 feet (I think he said) of open material below the bed of the river, where the plan No. B-2444 had shown rock, or something to that effect.

Q.—And, that was the special purpose of your visit?

A.—Yes.

Q.—After you returned home Mr. Bishop wrote you under date October 4th, and you wrote him under date October 7th?

A.—Yes.

Q.—In your letter you set forth the situation as it appeared from your point of view?

A.—Yes.

Q.—The letter to which we are referring is the letter of October 7th, Exhibit D-3?

A.—Yes, I believe so. I did write him, and I believe that was the date.

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—The steel sheet piling that was later driven would not affect conditions at the south end of the cofferdam?

A.—I hardly think it would.

Q.—This material that you saw at or above elevation 90 was above the original level of the stream bed?

A.—Yes, it must have been.

Q.—Why do you say that?

A.—Because drawing B-2444 shows the soundings there to have been anywhere from about 73 to 85.

Q.—Looking at the plan B-2444, what do you say was the level of the surface of the river bed at the point where you saw this material?

A.—It varied.

Q.—But, you said the material was across the stream. Go across, and tell me what it was at various points.

A.—Of course, at the north shore ...

Q.—(interrupting) You are now looking at the soundings on the line Station 4-K?

A.—Yes, and also the soundings on the line from Station 4 to Station 5.

Q.—Let us take the line Station 4-K first.

A.—I prefer to take both of them together, because at some point between those two lines, particularly nearer the north shore, this material that I saw must have been located.

Q.—The material you saw was right across the stream?

A.—But it must have been located at some point between those two lines.

Q.—In other words, if I understand you correctly, if we take a line somewhere between the line Station 4-K and the line Station 4-Station 5, we should be just about where you saw the material.

A.—Somewhere. At the north end. But at the south shore the material, or whatever I saw there, was probably farther downstream, because these two lines come together.

Q.—You saw the material, and you know whether the material at the south was farther downstream than it was at the north.

A.—That is not what I mean. I am afraid you misunderstood what I was trying to tell you.

This line, 4-K, runs across the river somewhere above the downstream face of the cribs. The line Station 4-Station 5, at the south shore, coincides with the line 4-K, but it crosses the

river at an angle with the line 4-K, so that near the north shore it is at some distance below the downstream face of the cribs, and at the south shore it is above.

This material was, roughly, parallel to line 4, but some distance below it.

Q.—How far would you say?

A.—20 to 30 feet, perhaps.

Q.—So, if we take a line anywhere between three quarters of an inch to an inch on the plan — a line parallel to 4-K, but approximately three quarters of an inch to an inch below it, we would probably have the location where the material was?

A.—Somewhere in that vicinity. Beginning at the south shore, at a point about 30 feet below the line 4-K. Of course, the river bottom there was at the elevation of the water at the time the survey was made, which was approximately elevation 95.

Q.—That is on the south shore?

A.—Yes.

On the shore line as it was at the time this was made.

Q.—The point you are indicating to me is much farther down than an inch, is it not?

A.—Perhaps a little. I am about 24 feet down. I am not 30 feet down.

Q.—What is the scale of the plan?

A.—You are correct. It is about 37 feet below.

In any event, anywhere from 30 to 40 feet below line station 4-K the elevation of the bottom at a point very near the shore is at about 90. As you go out into the river on that same line it drops down to about 89. As you get out about 40 feet from the shore, it drops down to between 85 and 86. As you get out into approximately the center of the original channel (that is about 60 feet from the south shore) it is a little under 84. As you get out 80 feet from the south shore line, it suddenly drops down to about 72.7. As you proceed about 20 feet farther towards the north shore, it comes up again to about 83.7. About 20 feet beyond that you reach the north shore line, where it is about 95.

Q.—You are not suggesting, are you, that at any point below the downstream face of the cofferdam, or adjacent to the downstream face of the cofferdam, there was any elevation in the river bed as low as 72?

H. S. FERGUSON (for Defendant) Cross-examination.

A.—Yes, I believe there was; and my belief is based on this drawing.

Q.—And your belief is that those soundings to which you have referred show the surface contours of the bottom?

A.—I believe they do, within a very short distance.

Q.—How short a distance?

A.—Within 2 feet, I should say.

Q.—So, where you had an elevation of 89 on the plan and material was showing at 90, and if that was one of the places Mr. Stratton had been pushing down with the rod and had gone down 2½ feet, your theory about the material having come through the cofferdam would not be worth much, would it?

A.—If that was only the quantity which came through the cofferdam. Whatever I saw that came through the cofferdam near the south shore was smaller in quantity than that which came through near the north shore.

Here is a point where the water was originally at around elevation 73, and it happens to be near where the greatest quantity of water I saw coming through the cofferdam was located. I am sure I walked out at that point on this fill, and looked between the timbers of the coffer to endeavor to see the way and the direction in which the water was running.

Q.—On October 1st, when you walked out on this stuff, how far out did you walk, and from which shore?

A.—The north shore.

Q.—How far did you go?

A.—I may not have gone out more than 40 or 50 feet.

Q.—But, with this material at elevation 90, you would not have had any difficulty in walking there with the water down to 90.5?

A.—No.

Q.—You are positive of that?

A.—Yes, that is my best recollection.

Q.—What I am saying to you is this: that if you came to the point where Mr. Stratton had gone through 2½ feet of overburden before he established an elevation of 89.2 on the plan, it would not surprise you very much to find some material showing at elevation 90 or over, would it?

A.—Not where there was originally only 2 or 3 feet.

Q.—And, if it was at elevation 90 it would not indicate to you that there was anything coming through the cofferdam?

H. S. FERGUSON (for Defendant) Cross-examination.

A.—Oh, yes. It would indicate that not much material had come through at that point.

Q.—If you have 89.2 two and one half feet below 90 — I admit the arithmetical proposition is a bad one — it would indicate that something had washed off the top rather than that anything had been added to it?

Witness:—Of the top of what?

Counsel:—It seems very plain to me. You have the surface of the river bed indicated to be 2½ feet above 89.2. Take that as an assumption. Then, if you look at the surface of the river bed, you will not be surprised to find it at elevation 90 or over, because 2½ feet would give you elevation 91.7?

A.—No.

On the south side of the river there may have been very little material came through the cofferdam, but towards the north side, where this channel is indicated at about 73, there must have been a larger mass came through. The fill was up to the surface of the water; which I believe I saw, but I am not very clear about it.

Q.—Was there a flume on the north shore when you went there?

A.—I think I recollect a flume, but I am not quite certain on which shore it was. I thought it was on the south shore, but I made a mistake

Q.—Did you walk over the flume, on the north shore, or the south shore, or wherever it was?

A.—I cannot recollect. I do recollect climbing over something, but I do not know whether it was that flume.

Q.—May be it was a high bank of material that had come through the cofferdam. In any event, will you scale the plan and show me how far 40 or 50 feet would put this material from the north shore?

A.—40 to 50 feet would take me out to the south side of crib No. 3. 50 feet is approximately the distance from the north shore to the south side of crib No. 3.

Q.—How much of that material would you say there was?

A.—I could give you no absolute idea, because at a short distance below it appeared at the downstream faces of the cribs there was water, and I could not see it.

H. S. FERGUSON (for Defendant) Cross-examination.

If the bed of the river at that point was as deep as the plan B-2444 indicates it to be there must have been considerable below, sloping down, below the crest of the fill I saw; but how far it went, or what quantity it amounted to, I am unable to say — I could not see it.

Q.—Where did this material start?

A.—My particular recollection is that at the point where I saw the greatest quantity of water coming through the downstream faces of the crib, or cribs, this material was right up to the face of the crib.

Q.—I do not think you understood my question. I mean with reference to the north bank of the river, where did this material start? Did it just meet the bank of the river, and did you just walk out on it from the bank of the river?

A.—I cannot clearly remember that.

Q.—If you walked out on it 40 or 50 feet, it must have been behind cribs Nos. 1 and 3?

A.—It was behind one of those two cribs. I do not remember which.

Q.—If it went right across the river, it would be behind both of them, would it not?

A.—Yes.

My best recollection is the point at which I told you, or consider, the men drove the rod was, I believe, pretty well out towards the centre of the river.

Q.—How did they go out to drive this rod? Did they walk out?

A.—I do not remember that.

Q.—Was there any reason why they should not walk out?

A.—They got there by walking, I believe, somehow; but I do not remember where they came from.

Q.—Did you see them out there working?

A.—I saw them out there running the rod down.

Q.—With the water at elevation 90.5?

A.—Approximately that. I was standing on the shore with Mr. Bishop when they did it.

Q.—Do you know Mr. Allison?

A.—Yes, sir.

Q.—Was he there?

A.—I believe he was. I believe he may have been there.

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—Was Mr. O'Shea there?

A.—I do not recall whether he was or not; and I do not recall particularly Mr. Allison being there, but I know he was with Mr. Bishop and me quite a considerable part of the time we were standing on the shore looking the situation over and discussing it.

Q.—I show you a picture of this dam, taken on November 16th, 1929 (we think by Mr. Dubreuil) This photograph has been produced by the Defendant as Exhibit D-26. It shows the site after it was unwatered down to elevation 86.2. Will you point out to me the material on which you walked at the downstream faces of those cribs?

A.—It looks as though it must have been just below crib No. 1.

Q.—Where the flume is?

A.—Yes.

Q.—If the flume was there, it certainly does not show any indication of the material going right across the river, from that photograph.

A.—There is none evident below Crib No. 3.

Q.—And you can see quite plainly, can you not, that there are stones or rocks of substantial size right behind crib No. 1?

A.—Right close to it.

Q.—You are not suggesting those came through the cofferdam, are you?

A.—No.

Q.—Do they not appear to be on the surface of the ground at that point?

A.—They appear to be.

Q.—So that your theory that there was a bank or strip across the river, at elevation 90, just below the cribs, does not seem to be supported by this photograph, does it?

A.—There certainly is material below crib No. 1.

Q.—It looks as if it consisted of fairly substantial size stones, as far as I can see?

A.—On the surface.

Below crib No. 3 no material appears above the surface of the water as it shows on this photograph.

Q.—Is there anything below crib No. 2?

A.—Yes, I can see material there.

Q.—Higher than the lower course of the crib?

H. S. FERGUSON (for Defendant) Cross-examination.

A.—It is higher by several feet than the water level that shows in this picture.

Q.—How many feet?

A.—I could only guess.

Q.—Would you mind giving me your guess as to the distance between the courses of those cribs?

A.—I should say possibly 40 inches.

Q.—40 inches between the logs?

A.—No. The surface of this material is 40 inches above the water level as it appears there.

Q.—And, if that is 86.2, 40 inches would bring it to 89?

A.—It would be 89.5. As I tell you, I am only guessing.

Q.—Will you give me your guess as to the distance between the courses of those cribs?

A.—I am guessing : centre to centre of the horizontal timbers is about 20 inches. That is purely a guess.

Q.—In any event, it is fairly clear when you look at crib No. 3 that there is not a bank across the river at elevation 90?

A.—At this time, yes, at that point.

Q.—It does not run across the river?

A.—Not entirely : unless that crib is sitting on it, and I do not think it is.

Q.—That crib is 22 feet wide. You scaled the plan this morning ?

A.—Yes.

Q.—Can you tell me whether crib No. 1 is higher than crib No. 3 ? I mean from the top of the top log to the bottom of the bottom log?

A.—I can only tell by comparing those with the plan B-2444 to see whether the deepest point in the channel is that occupied either by crib No. 1 or crib No. 5, or parts of both of them.

Q.—Or, crib No. 3?

A.—Yes.

It appears here as if the deepest part of the channel was the gap between them.

Q.—From this photograph it would look as if crib No. 3 had caught about the deepest part, would it not?

A.—The north side of it.

Q.—When you were speaking of the topography of this river bed, I think you said you meant the contours, or something

which would show the conformation and the surface of the bed?

A.—Yes.

Q.—And that is what the word "topography" would mean with reference to the bed of the river?

A.—"Topography" means the contours or the surface — the nature, and character, and what is on it.

Q.—Will you look at the plan B-2444, and say what it is called?

A.—It says : "Project Cedar Rapids Storage Dam showing topography at site of dam".

Q.—When you read this plan B-2444 you take the elevations that are given on it in the river bed to mean the elevations of the surface, do you not?

A.—I would, if I did not know any different?

Q.—When did you find out any different?

A.—That I do not know.

Q.—May I put it this way : when you designed your dam you certainly read it in the way I have described, did you not?

A.—I do not recollect.

I may say after Mr. Stratton returned and made this plan I discussed with him what he found there, and questioned him about what he did, and whether he felt certain that he had encountered....

Q.—(interrupting) But, I did not ask you what conversations you had with Mr. Stratton, or what questions you may have put to him. I asked you how you read the plan when you designed your dam. If you do not know, all you have to do is say so.

A.—I am trying to tell you that he may have told me at that time that he had run his rod down through it.

Mr. Forsyth:—I object to this answer as not being responsive to my question.

Mr. Geoffrion:—If the information of the witness is based upon a conversation he had with Mr. Stratton, he has a right to say so.

Mr. Forsyth:—Not unless it is responsive to my question, and I submit it is not.

H. S. FERGUSON (for Defendant) Cross-examination.

Witness:—What would you like to have me say? What do you want?

By Mr. Forsyth, continuing,—

Q.—You sent Mr. Stratton up there, and he brought back some information, ostensibly?

A.—Yes.

Q.—He put that information on a plan?

A.—Yes.

Q.—You used that plan to design the dam?

A.—I did.

Q.—When you read the plan for the design of the dam did you read those elevations in the river as being the elevations of the surface of the river bed?

A.—I have already told you I cannot remember that. I assumed those were points at which he had found rock, but I do not remember whether he told me there was anything over the rock or not, as he told you in Court.

Q.—But, if he did not tell you that you would naturally read it as being the surface?

A.—If he did not tell me that, yes, sir.

Q.—Because, obviously, a topographical plan would show the contours of the surface?

A.—Yes.

Q.—And, I suppose a person who put elevations on a topographical plan that do not show the surface would not be doing it strictly accurately? If they do not show the surface, they are not strictly speaking accurate?

A.—I think I should be given an opportunity to say something about this plan, and what its origin was.

Counsel:—You may do so if you wish.

Witness:—It is simply this: Mr. Stratton was sent up there to investigate this site, and another site, to see which was the better site to build the dam.

Q.—Neither one of which sites you had seen?

A.—No, sir, that is true.

I told him one of the important things was, of course, to find out whether we could find a site at which there would be rock for the bottom.

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—You told me you wanted to say something about the plan, and I was quite willing that you should do so. When you are endeavoring to tell me what you told Mr. Stratton, I do not think you are confining yourself to speaking about the plan.

A.—Whatever I understood about the plan, when it was received, I took it (as I have already told you) as a basis of designing this dam, and I knew very well we could not determine the bottom of the excavation and the masonry at every point, and the contract was expressly framed, or drafted, or there was provision in the contract for such conditions that wherever there was excess excavation or masonry above certain specified amounts it was to be paid for at certain prices. With that in view I felt a few feet of overburden probably would be something to be paid for.

Q.—When you designed this dam did you really feel anything at all about a few feet of over-burden?

A.—I have told you I could not remember whether Mr. Stratton told me such was the case.

Q.—But, you say the contract was expressly framed or drafted with the definite idea in view that if excavation was to go deeper there would be provision to pay for it?

A.—Yes.

Q.—I ask you whether in view of the information that Mr. Stratton had brought home to you the contract was expressly framed or drafted so that the contractor could not get any increase on the unwatering?

A.—The unwatering, and the method of unwatering, were left entirely to the contractor.

Q.—In all fairness, the topography of the surface of that river bed, and the nature of the material of which the surface was composed, were matters of extreme importance to the contractor in the unwatering, were they not?

A.—They certainly were.

Q.—And, if he received a topographical plan which showed that the surface of the river bed was ledge, when, as a matter of fact the person who had investigated it knew it was not ledge, then he would not be getting correct information on a point of extreme importance to him, would he?

Witness:—You are now refferring to this cofferdam construction?

Counsel:—I am referring to the information that was given by the plan.

A.—On the cofferdam construction, I would judge a contractor who did not investigate the nature of the bottom he had to contend with had not done all he should do.

Q.—I ask you whether the information as to the topography of the river bed and as to the material of which it consists are not of extreme importance to the contractor, from the point of view of the unwatering?

A.—Yes: I have said so.

Q.—And I ask you again whether an ordinary person reading that plan, without any opportunity of conversation with Mr. Stratton, would not take it for granted that the elevations shown on the plan were the elevations of the surface of the river bed?

A.—I believe he would, yes, unless told to the contrary.

Q.—And, if Mr. Stratton had been plunging the rod down 2½ feet in different places, and had indicated the elevation at which the rod stopped rather than the elevation at which it took bottom, then, to that extent, the plan did not convey accurate information?

A.—It did not show the actual level of the surface of the river bed.

Q.—And, if it showed an elevation, say, "89.2 L" a person without opportunity of conversation with Mr. Stratton would naturally assume that the surface of the river bed was ledge at that elevation, would he not?

A.—Yes, I think he would, from that plan.

Q.—I do not know it, but I would suggest to you that a person who failed to disclose the fact that there was a certain amount of overburden over the ledge elevations had not done what he should do with respect to displaying information on his plan?

A.—That is your opinion.

Q.—That is my opinion. Do you agree with it?

A.—No, I do not.

Q.—You do not share it?

A.—No.

Q.—You think it was quite all right for him to put on this plan....

A.—(interrupting) I think the contractors should have....

Q.—(interrupting) Do not talk about the contractor. I am talking to you about what the engineer should have done.

A.—I think if he had been asked he should have furnished the contractor any information he had in his possession.

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—And, I suggest to you if he had in his possession any information which contradicted the information on the plan, he should have given it without being asked for it. Do you not think so ?

A.—Yes, I think he should.

Q.—Obviously Mr. Stratton had information in his possession which this plan does not disclose; had he not?

A.—Yes.

Q.—And, the information of Mr. Stratton was the information of Mr. Ferguson?

A.—So far as I can recollect at this time.

By the Court:—

Q.—You said Mr. Stratton examined that site, and another site?

A.—Yes.

Q.—Did he make a plan of the other site also?

A.—I believe he did, but I am not certain about that.

Q.—Who decided upon the site on which the dam was to be built? It would be either you or Mr. Stratton; and, if it was you, you must have seen the two plans in order to be in a position to decide.

A.—I decided as between the two sites. My best recollection is that when sounding across the river at the other site he could not find what he thought would be solid rock all the way across the bottom ; and at this site we felt certain we were going to encounter solid rock entirely across the river bed, and it was on that ground we decided on this site.

Q.—It was entirely on Mr. Stratton's opinion that you decided on this site in preference to the other?

A.—Yes, sir.

By Mr. Geoffrion:—

Q.—Then, you probably had two plans, as his Lordship suggests?

A.—I might have. I do not recall.

By Mr. St. Laurent:—

Q.—They may have been sketches?

A.—They may have been.

H. S. FERGUSON (for Defendant) Cross-examination.

By Mr. Forsyth, continuing:—

Q.—I would like to ask you a few questions with regard to this hardpan. You visited the site first with reference to the hardpan claim on March 3rd, 1929?

A.—Yes.

Q.—Prior to that you had had some correspondence with Mr. Bishop about it?

A.—I had received one or more letters from him on the subject.

Q.—And I believe on reception of his complaint (if we may so call it) in regard to the hardpan, you thought it just as well to let the matter rest until it was discovered how much hardpan there was: that is not to make any decision on his claim until you discovered just how far this state of affairs would continue?

A.—I cannot recall just why I did not attend to it in the beginning. I think in one of the letters he wrote me he suggested that if as they got further in, as the work developed, and the excavation was as difficult as it seemed to be in the beginning that he would make a claim.

Q.—On November 21st, 1928, Mr. Bishop wrote you (Exhibit 21 with Particulars):

> "We find in opening up the work that the lower ten feet of the by-pass cut is practically hardpan, very much more difficult to excavate than the material described as having been found in the test pits. If this condition continues throughout the cut we shall ask for an adjustment to cover the difference in costs".

A.—I recall that.

Q.—You replied to that letter?

A.—I believe so.

Q.—On November 28th you wrote the Maclaren Company

> "Mr. Bishop states that in opening the lower end of the cut in the by-pass channel he finds hardpan in the bottom which is considerably more expensive..."' etc.
>
> "This matter was not passed upon by me since the question may not arise at all. I prefer to reserve decision on this point until a definite claim is made."

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—Your thought was there might not be very much of this material in any event?

A.—Yes.

Q.—And that, consequently, the matter might ever arise?

A.—I think that is correct.

Q.—Obviously, however, the matter did arise again, from Mr. Bishop's point of view; and on March 3rd you went up to look into it, among other things?

A.—Yes.

Q.—Mr. Bishop wrote you on February 22nd (Exhibit P-3) requesting an adjustment of the price he was to be paid for such material, and failing this that arbitration be proceeded to, as provided under the contract. Do you recall that?

A.—I think I do.

Q.—You replied to that letter on March 22nd, 1929 (Defendant's Exhibit D-1), and I will read your letter to you:

> "This is in reply to your letter of February 22nd, in which you 'request an adjustment of the price to that usually paid for such material' as that which has been excavated on the easterly shore at the Cedar Dam..."

Witness:—I meant by that the northerly shore, because in the first stages of this work I had sort of pictured in my mind the river running north and south.

Q.—That would be the north side of the by-pass?

A.—The north side of the main river.

Q.—But, when you are talking about the excavation it would be the north of the by-pass, because the by-pass and the river were, to all intents and purposes, parallel?

A.—Approximately.

Q.—Your letter goes on:

> "Since, as set forth in Paragraph A on page 7 of the contract, and one pages 1 and 2, Article 2 of Section 3 of the Specifications, compensation for excavation work in the by-pass channel, which would not have been required if the contractor had chosen to provide for handling the water in some other manner, is included in and covered by the principal sum, it is assumed that your request applies to that portion of this excavation which would have been necessary to obtain the foundations for the dam if the by-pass channel had not been constructed.

H. S. FERGUSON (for Defendant) Cross-examination.

Your letter states that, when tendering on the work, you were informed that test pits which had been dug and which had been refilled when you visited the site, indicated that the material to be encountered would consist of 5 to 6 feet of light sand at the top, with gravelly material containing occasional boulders extending therefrom to rock; and I assume that you base your request for additional price allowance on the ground that the material actually encountered represents more difficult excavation than you anticipated.

It does not appear to me that any representations which may have been made to you concerning the character of the material which might be encountered in making this excavation are a justification for granting your request.

You undertook to do all excavating required to construct the dam for the principal sum provided that the quantities proved to be the same as those specified in the contract, which contains prices for correcting the principal sum if the quantities prove to be different.

None of the test pits excavated in the line of the bypass channel were carried to rock, including those located where the dam crosses it, and no representations could have been made to you concerning the kind of material which lay beneath the bottom of the pits, which you must have known did not extend to the elevation to which the excavation would have to be carried to obtain rock.

It seems to me, therefore, that when preparing your tender, it rested with you to determine or assume the character of the material to be excavated and that, so far as the owners are concerned, it is proper for them to assume that your price and estimated cost should have taken into consideration the material which might be encountered.

In other words, you prepared your tender after examining the site, and inspecting whatever evidences of conditions were visible, and the fact that you may have erred in estimating the nature of the material to be excavated and the cost of removing it in no way justifies or authorize me to grant your request."

And that was your view of the situation?

A.—That was my view, so far as my authority to act under the contract was concerned.

Q.—And, it is still your view?

A.—Yes.

Q.—Might I ask you what is the purpose of digging a test pit?

A.—It is to show the nature of the material through which you are passing, and sometimes there is part of a purpose in this case to discover, if possible, the surface of bed-rock — where it was located.

Q.—Of course, a test pit will show the material you have to go through in the vicinity of the test pit, so far down as the test pit goes?

A.—It should within a reasonable area surrounding it.

Q.—And, of course a test pit that is not carried to rock will not tell you where the rock is?

A.—No, sir.

Q.—Was the purpose of those test pits Mr. O'Shea made to find out where the rock was?

A.—I do not doubt but what that was part of the purpose at least.

Q.—And the other part was to find out what sort of material it was?

A.—At that point.

Q.—Down how far ?

A.—Down as far as they went.

Q.—What would regulate the depth to which they would go?

A.—I know in two instances they got down about as deep as they thought they could excavate by the methods they had available there. In other cases they encountered the surface of the rock before they got beyond the depth to which it was practical to excavate with pick and shovel.

Q.—Did they get down to rock with any of the test pits in the by-pass channel?

A.—I think not ; except I believe there were two pits on the other side of the channel — I cannot say how far away from the centre of the channel — in which they discovered rock. Then I think they attempted pits nearer the channel, and carried them down to a considerable depth, but did not encounter any rock, and stopped.

That is my recollection of it.

Q.—With the exception of the point where the line of dam crosses the channel, why would anyone be interested in knowing where the rock was?

A.—As a matter of fact, affecting the quantities of work to be done and the kind of work to be done.

Q.—You think it was of some importance to know where rock would be located in the channel other than where the line of dam crossed it, for the purpose of estimating quantities?

A.—No. I meant, to know to what depth you had to go where the dam was going to be located before you encountered rock.

Q.—Will you look at the plan B-2444, and tell me where you would go to sink a test pit for the purpose of ascertaining the level of the rock for the by-pass channel, if you were doing it?

A.—I think I would put it down about where that pit is located.

Q.—The pit being the one numbered 4?

A.—No. 4.

Q.—Did that one get down to rock?

A.—I do not think it did. I think it was one of the pits that did not.

Mr. Geoffrion:—Of course, this is not cross-examination. I did not question the witness on the test pits at all.

Mr. Forsyth:—But, you questioned him on the hardpan, and this is in connection with it.

Mr. Geoffrion:—I questioned him with regard to his visit to look at the place, and the fact that he spent one day there looking at it.

This is not cross-examination, and I object to it.

His Lordship:—I think it is sufficiently closely connected with the matter of hardpan to be allowed as cross-examination.

Mr. Geoffrion:—The witness did not see the test pits.

His Lordship:—But, it is connected with the fact that the contractors claim they were told what the nature of the soil was, and that they were told on account of those test pits having been dug.

H. S. FERGUSON (for Defendant) Cross-examination.

I think it is proper evidence in cross-examination.

By Mr. Forsyth, continuing:—

Q.—Then test pit No. 4 was not a useful test pit for the purpose of discovering where the rock was in the line of dam?

A.—No, it proved not to be.

Q.—Do you know how deep it was driven?

A.—The note on this plan is "Bottom of pit, elevation 93.2".

Q.—What depth would that be?

A.—It would be approximately 26 feet below the surface of the ground at the pit.

Q.—What other test pit do you think would have been useful in connection with the ascertaining of rock in the line of dam?

A.—The pit numbered 5 on this drawing was excavated to elevation 101, or about 19 feet below the surface of ground at that point.

Q.—Was any rock found around there?

A.—There is no note to that effect on this drawing, and I do not believe there was.

Q.—So, test pits Nos. 4 and 5 were not, so far as the ascertaining of rock was concerned, useful except that they disclosed it was not within 26 feet and 19 feet of the surface of the ground?

A.—That is true. They developed that fact. Within about 10 feet north of that the rock comes up to the surface, as indicated here.

Q.—Have you a definition of hardpan, that you would care to give us?

A.—What I consider to be hardpan would be any material that is so compacted and indurated or hardened that it is exceedingly difficult to remove — that it cannot be removed by ordinary picking and shovelling — that it is perhaps almost to the degree of rock in the process of formation. It might be hardened by chemical action, or pressure, or by the nature of the cementing materials.

Where material which might be called hardpan commences, and material which might not be called hardpan leaves off, it is rather difficult to say. Different engineers would have different opinions about that limit.

Q.—But I think we may say this: that a material which you could not dig with an orange-peel without the use of explosives would be coming pretty close to hardpan?

A.—Not necessarily so. Hard excavation is not necessarily hardpan, as I would view hardpan.

Q.—But, would it be some evidence that you were getting close to hardpan?

A.—No, not that.

If I were to classify hardpan, or to decide what is hardpan, or what is not hardpan. I would certainly take material that is so compact and so hard to excavate that it would be difficult even to drive a pick into it.

Q.—I understood you to say that in cofferdamming, where you had an over-burden of substantial depth (and I suppose the depth would not really make much difference) the contractor would excavate a narrow trench in front of his cribs, to the ledge, and sheet down in that trench?

A.—I meant to give the impression, or convey the idea, that when he was placing his sheathing if the bed or the river was overlaid with a layer of boulders or open material that he could not drive his sheathing into, the proper thing to do would be to excavate it away until he got down to impervious material.

Q.—That is to say, he would make a narrow cut? I think that was the expression you used?

A.—Dredge away, I think was the expression used.

Q.—And, if he had nine feet of the pervious material overlying the impervious material, he would first dredge away a nine foot cut in front of his cribs, and then he would put his diver down into the cut, I suppose, to shape the sheathing to the bottom?

A.—If he had nine feet of open material, the easy thing to do would be to dredge it away before he ever sank his cribs into it.

Q.—If he had known it, that would have been the thing to do?

A.—Yes.

Q.—But, if he did not know it? If he had his cribs down there, and then discovered he had those nine feet of pervious material, would he still make a cut in front and sheath into it?

A.—I would, down to a certain depth, yes, — even four or five feet.

H. S. FERGUSON (for Defendant) Cross-examination.

Q.—Would you go as low as 9 feet?

A.—I would not expect to find I would have to go that depth, no. In any situation I have been to see I have never seen that depth of open material on the top of rock.

Q.—Have you ever heard about the Kenogami?

A.—I do not know to what you refer. I know where Kenogami is.

Q.—You did the designing of some dams up there, did you not?

A.—I prepared some designs. I do not know whether they were ever used or not.

Q.—There is no reason, is there, for the statement that there would not be nine feet of over-burden?

A.—From my experience, yes. I would say it very seldom happens, or almost never. Usually I find a layer of compact material on the rock where it is overlaid by anything. This layer is almost always strictly impervious, and very hard. On top of it it may be shingle, or paved with loose rock or boulders for two or three feet in depth.

Q.—In any event, in the operation you have described you would go down as far as four or five feet?

A.—I think I would.

Q.—And, on one side, upstream from you, you would have a lot of water ?

A.—Yes.

Q.—And, downstream from you you would have a crib 35 x 20 x 20, if it was a big as these?

A.—Yes.

Q.—And, it would be weighted down with stone?

A.—Yes, it certainly would be.

Q.—Resting on the edge of this cut into which you were going to sheath?

A.—Yes.

Q.—That suggests some things that migth happen, does it not?

A.—You mean that digging the trench down you might undermine your crib and have it sink into it?

Q.—That is what I refer to.

A.—It is possible it would happen, but not very likely, with a crib 30 feet square, going down four or five feet below the bottom or at the upstream edge.

Q.—Let me put it this way : either you or I would rather be standing on the top of the crib than down in the cut with a diving suit on?

A.—Oh, yes. It would have to be dredged.

Q.—Your own plans, or Mr. Stratton's plans (whose-ever they are) for the design of this dam showed the unwatering plan?

A.—It indicated a plan of unwatering.

Q.—Which seemed to you to be the best plan?

A.—Yes, it seemed to me the better plan?

Q.—Better than what?

A.—Better than an alternate. The only alternate I can see would be to divide the river into two narrow sections by building a cofferdam down the centre.

Q.—Did you think that was commercially feasible?

A.—No, I did not. That is why I say the other appeared to me better ; because the river was so narrow there that it was hardly necessary to divide it.

Q.—May I suggest to you a definition of hardpan, which I find in the evidence:

> "This does not seem possible to Mr. Ferguson, as material already dredged seems to be a compact mass of clay, sand, pebbles, and small boulders."

Mr. Geoffrion:—There is no definition of hardpan mentioned in that.

By Mr. Forsyth, continuing:—

Q.—I will read it to you again, and ask you if it is a good definition of hardpan:

> " The material already dredged seems to be a compact mass of clay, sand, pebbles, and small boulders."

A.—No, I would not say that is a sufficient definition to cover hardpan.

Q.—That is by Mr. O'Shea, who went on to say:

> " This does not seem possible to Mr. Ferguson, as the material already dredged seems to be a compact mass of clay, sand, pebbles and small boulders — about a hardpan."

You would not think that was accurate?

A.—It would not necessarily be so. I would not say that

definition would necessarily mean hardpan. It refers to material dredged at the site of the dam?

Q.—But, do you think it makes a difference as to where you take any material out as to whether it is hardpan or not?

A.—No indeed.

Q.—Then, why make that statement?

A.—I was asking you.

Q.—When we were speaking about hardpan, you wrote a letter, under date March 22nd, in which you definitely took the position that Mr. Bishop was not entitled to anything for the hardpan?

A.—Yes.

Q.—Have you now any more information about the situation than you had then?

A.—No, only what I have heard discussed.

Q.—What you heard here?

A.—Yes, and what I heard discussed.

At that time the cut was not complete. I did see it once after that, I think in July, and again when I was there in October.

Q.—The water was going through the by-pass in October?

A.—The water was going through the by-pass in October, yes.

Q.—And you were not concerning yourself about hardpan then?

A.—I do not think I paid any attention to it. I saw what was there.

Q.—Nor were you concerning yourself with it in July either, having taken the position you took in March?

A.—I imagine so.

Q.—That necessarily brings up to the conclusion that the testimony you have given here about the hardpan was based upon the information you acquired when you went there in March?

A.—Yes.

Re-examined by Mr. Geoffrion, K.C., of counsel for Defendant.—

Q.—You were asked in cross-examination if as each crib is placed, and the river is therefore narrowed, the current does not increase. Once the by-pass is opened, and all the cribs are placed and the gaps in the cribs are filled, where does the current go?

A.—Of course until the cribs are sheathed there would be considerable leakage between the timbers.

Q.—But, I am speaking of the strength of the current. When all the cribs are placed and joined and the by-pass is opened, where does the current go?

A.—There would be considerable leakage through those cribs. Usually up to the faces of them you would perhaps have a considerable amount of current, but I think the current would be reduced considerably from what it was, say, before the last gap was filed, at least a few feet above the dam.

Q.—Dealing with the soundings taken by Mr. Stratton, and taking a builder who is shown the plan B-2444 indicating soundings taken 20 feet apart, could the contractor rely exclusively on those soundings to build his cribs, according to you?

A.—No.

Q.—Did you notice on Exhibit P-37 that when the sheathing was placed it was placed a certain distance from the faces of the cribs?

A.—Yes, I did notice that.

Q.—About how many feet, would you say?

A.—In front of cribs Nos. 1 and 5 the distance between what here indicates the line of the face of the crib and the planking varies from 4 feet to 2 feet. In front of cribs 2 and 4 the distance between the planking and the face of the crib varies from about 8 feet to about 16 feet.

Q.—Taking, first, cribs Nos. 2 and 4, what would you say of that distance as being a protection against the cribs crushing down their support and filling the trench or excavation?

Witness:—In case they excavate for the piling?

Counsel:—Yes. At the distance where the sheathing was put.

A.—In my opinion, in front of those two cribs there is no question of the fact that the sheathing is sufficiently far away from the face of the crib to preclude any question of undermining the crib if a trench were excavated for the sheathing.

Q.—And, what would you say in regard to the other part?

A.—In my opinion, in front of cribs Nos. 1 and 5 there would be no difficulty from undermining if a trench was dug a few feet in depth below the surface of the river bed.

Q.—What do you mean by a few feet?

A.—Perhaps 3 or 4 feet.

H. S. FERGUSON (for Defendant) Re-examination.

By Mr. Forsyth:—

Q.—What slope would the trench under water take?
A.—I could not say, because I am not sure about the material. If there were gravel and boulders....
Q.—(interrupting) Of course the nature of the material is a very important thing when we are discussing how far away a trench would have to be safe, or how far away it would not be safe?
A.—It would be a point.
Q.—And, an important point?
A.—Yes.

From what I know, and what I have been told of that bottom, and what little I have seen, the material which has been testified to as being dug off the bottom — there must have been pretty hard material on top of that rock.

Q.—There is nothing about the upstream alignment of the faces of those cribs which would indicate any necessity for having the wood sheathing at a greater distance upstream from Nos. 2 and 4 than from Nos. 1 and 5, is there?
A.—No, there is nothing on this drawing Exhibit P-37 to indicate to me why that was done.
Q.—But it obviously was done, was it not?
A.—Yes, it was.

And further deponent saith not.

And the further hearing of testimony is continued to Wednesday, March 8th, at 10.30 o'clock in the forenoon.

L. LAROCQUE (pour la Défenderesse) Examen en chef.

DEPOSITION DE LORENZO LAROCQUE

Témoin entendu de la part de la défenderesse.

Ce huitième jour du mois de mars de l'an mil neuf cent trente-trois, a comparu Lorenzo Larocque, journalier, âgé de trente-cinq ans, demeurant à Notre-Dame du Laus, témoin produit de la part de la défenderesse;

Lequel, après serment prêté sur les saints Evangiles, dépose et dit:

Interrogé par Me Aylen, C. R., Procureur de la Défenderesse:—

Q.—Pendant l'été de mil neuf cent vingt-huit (1928), étiez-vous à Notre-Dame du Laus, près de ce voisinage?

R.—Oui, j'étais à Notre-Dame du Laus.

Q.—Est-ce que vous avez travaillé avec M. O'Shea et d'autres pour creuser certains puits sur une partie du terrain sur lequel on a construit un canal de dérivation pour l'eau?

R.—Oui, monsieur.

Q.—Vous rappelez-vous dans quelle saison de l'année vous avez fait ce travail-là?

R.—En mai et juin.

Q.—De l'année mil neuf cent vingt-huit (1928)?

R.—Mil neuf cent vingt-huit (1928).

Q.—Pour qui avez-vous travaillé? Sous les ordre de quelle personne?

R.— M. Pierre Bergeron.

Q.—M. Bergeron était le contremaître, n'est-ce pas?

R.—Oui, monsieur.

Q.—Vous avez travaillé vous-même comme journalier pour faire ce travail que vous venez de mentionner?

R.—Oui.

Q.—Vous rappelez-vous de mémoire combien de puits vous avez creusés à cet endroit?

R.—Cinq.

Q.—Est-ce que vous avez travaillé vous-même sur les cinq?

R.—Oui.

Q.—On les a creusés les uns après les autres, je suppose?

R.—Oui, monsieur.

Q.—De quoi vous êtes-vous servi pour creuser ces puits-là?

L. LAROCQUE (pour la Défenderesse) Examen en chef.

R.—On les a creusés avec des pelles.
Q.—Combien d'hommes ont travaillé à ce travail-là?
R.—Six ou sept.
Q.—Est-ce que tous se sont servi de pelles?
R.—Oui.
Q.—Est-ce que vous aviez des pics aussi?
R.—Oui.
Q.—Est-ce que vous vous êtes servi des pics?
R.—Non.
Q.—Pourquoi ne vous en êtes-vous pas servi?
R.—Ce n'était pas assez dur pour piquer.
Q.—Vous-même, vous ne vous êtes pas servi d'aucun pic?
R.—Non.
Q.—Avez-vous vu d'autres hommes se servir de pics quand vous étiez là?
R.—Non.
Q.—A quelle profondeur êtes-vous allé avec ces puits-là?
R.—Dix-huit (18) à vingt (20) pieds.
Q.—Pouvez-vous me dire quelle était la nature du matériel que vous avez pris?
R.—Du sable mélangé avec de la roche.
Q.—Quelle espèce de roche?
R.—De la roche ronde "boulders".
Q.—Pouvez-vous me dire si on s'est servi de dynamite pour ce travail?
R.—On a cassé une roche dans un trou.
Q.—Est-ce la seule fois que vous vous êtes servi de dynamite?
R.—Oui.
Q.—Est-ce que vous avez employé quelque chose pour empêcher la terre de débouler?
R.—On a descendu une boîte, un "crib".
Q.—Pour quelles fins? Pourquoi vous êtes-vous servi de cela?
R.—Pour empêcher de débouler la terre dans le trou.
Q.—Dans ces puits que vous avez creusés, est-ce qu'il y avait de l'eau?
R.—Oui.
Q.—Pouvez-vous nous dire à quelle profondeur vous avez trouvé l'eau?
R.—De sept à huit pieds.
Q.—Quand vous êtes descendu de sept à huit pieds, vous avez trouvé de l'eau?
R.—Oui.

L. LAROCQUE (pour la Défenderesse) Contre-interrogé.

Q.—Pouvez-vous me dire d'où venait cette eau?
R.—Ca sortait à travers du sable.
Q.—Quand vous êtes descendu à la profondeur mentionnée?
R.—Oui.
Q.—Est-ce que vous vous êtes servi de quelque chose pour ôter l'eau?
R.—On avait des pompes.

Contre-interrogé par Me Saint-Laurent, c.r., procureur de la Demanderesse:—

Q.—Vous demeurez encore à Notre-Dame du Laus?
R.—Oui.
Q.—Etes-vous à l'emploi de la compagnie?
R.—Non.
Q.—Avez-vous déjà été à l'emploi de la compagnie?
R.—Oui.
Q.—Quand?
R.—Cet hiver.
Q.—Vous n'êtes pas à son emploi dans le moment, mais vous travaillez habituellement pour la compagnie quand il y a de l'ouvrage là?
R.—Oui.
Q.—En quoi consiste votre travail habituel?
R.—Dans le bois.
Q.—Ces puits que vous avez creusés, c'est aux mois de mai et juin mil neuf cent vingt-huit (1928)?
R.—Oui.
Q.—Quel autre ouvrage avez-vous fait en mai et juin mil neuf cent vingt-huit (1928)?
R.—Je n'ai pas fait d'autre ouvrage en mai et juin.
Q.—Alors, tout ce que vous avez fait en mai et juin mil neuf cent vingt-huit (1928), ç'a été le travail que vous avez fourni au creusage des puits?
R.—Oui.
Q.—En avril mil neuf cent vingt-huit (1928), quel ouvrage avez-vous fait?
R.—Je ne me rappelle pas directement.
Q.—En juillet mil neuf cent vingt-huit (1928), quel ouvrage avez-vous fait?
R.—J'étais sur la "drive".
Q.—En mai et juin mil neuf cent vingt-sept (1927), quel ouvrage avez-vous fait?

L. LAROCQUE (pour la Défenderesse) Contre-interrogé.

R.—Je ne me rappelle pas.

Q.—Vous rappelez-vous quel ouvrage vous avez fait en mai et juin mil neuf cent vingt-neuf (1929)?

R.—Oui. Je travaillais à la "Bishop".

Q.—A quel endroit?

R.—C'était aux Cèdres, je chauffais sur un "boilers".

Q.—Pour la "Bishop Construction Co."?

R.—Oui.

Q.—Tout le cours de mai et juin mil neuf cent vingt-neuf (1929)?

R.—Mil neuf cent vingt-neuf. (1929).

Q.—Vous êtes sûr de cela?

R.—Oui.

Q.—C'était une bouilloire pour partir la vapeur, pour faire fonctionner ces machines-là?

R.—Oui.

Q.—Quelle partie de travail se faisait par les machines? Où se faisait le travail?

R.—Sur un "derrick", sur une pelle à "steam", je suppose.

Q.—Vous chauffiez une bouilloire pour faire fonctionner une pelle à "steam"? Où la pelle à "steam" travaillait-elle?

R.—Elle travaillait sur l'île.

Q.—Sur ce qui est devenu une île, lorsqu'ils ont fait le canal de dérivation?

R.—Oui.

Q.—Travailliez-vous de jour ou de nuit, vous?

R.—Je travaillais de jour.

Q.—Demeuriez-vous sur les travaux dans un des camps ou si vous restiez chez vous?

R.—Chez nous, au village.

Q.—Combien de temps avez-vous travaillé pour la "Bishop"?

R.—J'ai travaillé en trois différents termes.

Q.—Quels sont ces trois différents termes ? Quand le premier terme a-t-il commencé?

R.—Je ne peux pas dire au juste.

Q.—Combien de temps a-t-il duré le premier terme?

R.—Je ne me rappelle pas.

Q.—Quand le second terme a-t-il commencé?

R.—Je ne me rappelle pas.

Q.—Combien de temps a-t-il duré?

R.—Je ne sais pas.

L. LAROCQUE (pour la Défenderesse) Contre-interrogé.

Q.—Quand le troisième terme a-t-il commencé?

R.—Il a commencé, je pense, le vingt-sept (27) décembre, je ne me rappelle pas l'année.

Q.—Combien de temps a-t-il duré?

R.—Deux mois et vingt-cinq (25) jours.

Q.—Etait-ce cette fois que vous étiez chauffeur sur la bouilloire?

R.—Non, cette fois-là je "runnais" une pompe, après j'ai rachevé sur l'engin du "crusher".

Q.—Quand vous runniez cette pompe, je croyais que vous aviez dit que c'était le (27) décembre que vous aviez commencé?

R.—Oui.

Q.—Deux jours après Noel?

R.—Oui.

Q.—Il n'y a pas d'erreur quant à cela?

R.—J'ai commencé sur la pompe.

Q.—Où était installée cette pompe?

R.—Sur la "coffer-dam".

Q.—Le batardeau d'en haut ou le batardeau d'en bas ? Etait-il placé sur le "coffer-dam" d'en haut ou le "coffer dam" d'en bas?

R.—Je ne me rappelle pas au juste.

Q.—Quant à ce travail de creusage que vous avez fait, c'est M. Bergeron qui était le contremaître dites-vous?

R.—Oui.

Q.—Est-ce lui qui vous a engagé?

R.—Oui.

Q.—Et, il y avait six ou sept hommes?

R.—Oui.

Q.—O'Shea était un de ceux-là?

R.—Oui.

Q.—Bergeron, un autre?

R.—Oui.

Q.—Et vous, un troisième?

R.—Oui.

Q.—Pouvez-vous nous dire quels étaient les quatre autres?

R.—Je ne m'en rappelle pas.

Q.—Vous avez creusé cinq (5) puits? Quel est celui par lequel vous avez commencé?

R.—Je ne me rappelle pas.

Q.—Quel est celui par lequel vous avez fini?

R.—Je ne m'en rappelle pas.

Q.—Est-ce que le matériel depuis la surface jusqu'au fond a été pratiquement le même?

L. LAROCQUE (pour la Défenderesse) Contre-interrogé.

R.—Un peu de terre dessus, ensuite du sable.
Q.—Un peu de terre, vous voulez dire terre cultivable?
R.—Oui.
Q.—Combien d'épaisseur?
R.—Une couple de pieds.
Q.—Après cela du sable?
R.—Après cela du sable.
Q.—Jusqu'au fond?
R.—Oui.
Q.—A part une place où vous avez trouvé un gros cailloux qu'il a fallu faire sauter à la dynamite?
R.—Dans un trou.
Q.—C'est le seul où il y a eu d'autres choses que du sable et des cailloux ronds?
R.—Oui.
Q.—Vous aviez des pics tout le temps?
R.—Oui.
Q.—Et personne ne s'en est servi?
R.—Non.
Q.—Est-ce qu'on laissait cela sur le terrain quand on rachevait le soir ou si on les rapportait à un hangar pour les mettre en sûreté?
R.—Quand on ne s'en servait pas, on ne les apportait pas.
Q.—Vous les aviez sur les travaux, le soir, quand vous retourniez, est-ce que vous aviez une place où vous mettiez vos instruments?
R.—Oui.
Q.—Vous les rapportiez à cette place-là, le soir?
R.—On les laissait là, on ne s'en servait pas.
Q.—Vous les laissiez où? Ce que je veux savoir, apportiez-vous les pics à côté du trou?
R.—On ne les apportait pas.
Q.—Où aviez-vous ces pics-là?
R.—On les avait où on serrait nos outils.
Q.—Où serriez-vous vos outils?
R.—Dans une boîte, là sur le terrain.
Q.—Est-ce que les pics sont restés dans la boîte tout le temps?
R.—Oui.
Q.—Ils n'ont pas été sortis?
R.—Non.
Q.—La boîte est restée sur le terrain tout le temps?
R.—Oui.

P. BERGERON (pour la Défenderesse) Examen en chef.

Q.—Ces trous ont été creusés de dix-huit à vingt-pieds, tous ce qu'ils en étaient?

R.—Oui.

Q.—Voulez-vous dire qu'on a sorti le matériel avec des pelles et qu'on l'a mis sur le dessus?

R.—On l'a sorti à la "bucket", à la chaudière.

Q.—Ce que vous voulez dire, c'est qu'il a été fait un trou qui allait jusqu'à dix-huit (18) vingt (20) pieds de profondeur?

R.—Oui.

Q.—Ce n'est pas simplement envoyer des barres ou envoyer des machines pour perforer, des hommes descendaient et pelletaient ce qu'il y avait, et le sortait dans des "buckets"?

R.—Oui.

Q.—Cela ç'a été fait partout?

R.—Un, je pense, ou deux, qu'on a descendu une tarrière-

Q.—Savez-vous lequel?

R.—Non.

Q.—En mil neuf cent trente et un (1931), en mai et juin, où avez-vous travaillé?

R.—Je ne me rappelle pas dans le moment.

Et le déposant ne dit rien de plus.

DEPOSITION DE PIERRE BERGERON

Cultivateur, âgé de trente-deux ans, demeurant à Notre-Dame du Laus, témoin produit de la part de la défenderesse;

Lequel, après serment prêté sur les Saints Evangiles dépose et dit;

Interrogé par Me Geoffrion, C. R., Procureur de la Défenderesse:—

Q.—Vous êtes cultivateur de Notre-Dame du Laus depuis longtemps?

R.—Depuis cinq ans.

Q.—Avez-vous déjà travaillé à des constructions, à des travaux pour construire des digues?

R.—Oui, monsieur.

P. BERGERON (pour la Défenderesse) Examen en chef.

Q.—où?

R.—J'ai travaillé à Highland Falls, compagnie Fraser Bros. J'ai travaillé à Kapuskasing, j'ai travaillé au Rapide des Cèdres.

Q.—Vous avez travaillé au Rapide des Cèdres où les Bishop construisaient pour la compagnie Maclaren?

R.—Oui.

Q.—Vous connaissez M. O'Shea, en Cour, ici?

R.—Oui.

Q.—Avez-vous été employé par lui avant le commencement des travaux?

R.—Oui.

Q.—Pour creuser des puits?

R.—Oui.

Q.—Quelle était votre occupation, là?

R.—J'étais contremaître.

Q.—Où avez-vous creusé ces puits?

R.—Au barrage des Cèdres, côté nord de la rivière.

Q.—Sur terrain sec?

R.—Oui.

Q.—Vous aviez combien d'hommes?

R.—J'en avais une demi douzaine, six ou sept. Dans l'intervalle il y en a qui ont lâché, d'autres ont repris.

Q.—Quelle était la profondeur, à peu près, vous rappelez-vous?

R.—Des puits qu'on a creusés là?

Q.—Oui, en moyenne?

R.—C'a été dans une vingtaine de pieds.

Q.—Quel instrument avez-vous pris pour les creuser ?

R.—Des pelles et des chaudières.

Q.—Avez-vous besoin de vous servir de pics?

R.—Non, pas pour creuser.

Q.—Pourquoi?

R.—On s'est servi d'un pic, un homme s'est servi d'un pic, une fois, dans un trou du long du rocher pour voir si on était sur le rocher. Il a creusé un pouce, deux pouces pour gratter, pour voir si ce n'était pas une grosse roche.

Q.—Vous êtes-vous servi de dynamite?

R.—Une fois.

Q.—Pourquoi?

R.—Pour casser une roche, pour la sortir des trous.

Q.—Quelle était la nature du matériel que vous avez sorti?

R.—Du gravois, du sable, de la terre, de la roche, de la grosse roche .

P. BERGERON (pour la Défenderesse) Examen en chef.

Q.—Le travail était sec ou mouillé?
R.—Bien trempe.
Q.—D'où venait l'eau?
R.—Dans la terre, des sources qu'il y avait dans la terre.
Q.—A la surface ou dans la terre?
R.—Dans la terre.
Q.—Vous ne savez pas à quelle profonleur?
R.—A peu près huit (8) pieds, sept, huit (8) pieds, je n'ai pas mesuré, mais à peu près cela. L'eau venait.
Q.—Avez-vous rempli les trous ensuite?
R.—Oui.
Q.—Pourquoi?
R.—Il a été question que le cultivateur avait peur que ses enfants et ses animaux tombent dans le trou. Il a fait remplir ces trous.
Q.—Est-ce que la terre se tenait dans ces trous-là?
R.—Non. Elle cherchait rien qu'à tomber dans les trous.
Q.—Qu'est-ce que vous avez fait alors?
R.—On a boisé cela.
Q.—Avez-vous ensuite travaillé au creusage du détournement de la rivière?
R.—Oui.
Q.—Vous avez travaillé pour qui, là?
R.—Pour la compagnie Bishop Construction Co.
Q.—D'après ce que vous avez vu là, quelle était la nature du matériel?
R.—Pareil comme quand on a creusé là; terre, du gravois du sable et des grosses roches.
Q.—Quel usage a été fait de la dynamite?
R.—Pour l'excavation, là?
Q.—Vous avez dit que pour votre creusage vous avez employé de la dynamite une fois. Je veux savoir pour l'excavation même?
R.—Je ne les ai pas vu se servir de dynamite tant que la terre n'a pas été gelée.
Q.—Avez-vous eu connaissance des travaux pour placer des "cribs" pour les "coffer-dams"?
R.—Oui.
Q.—Avez-vous travaillé là-dessus aussi?
R.—Oui, j'ai travaillé, j'ai aidé à les placer.
Q.—Maintenant, voulez-vous nous raconter s'il est arrivé quelque chose, quelque trouble au sujet de ces "cribs", au sujet d'un ou deux des "cribs", prenez-en un d'abord. Y a-t-il quelque chose de spécial, trouble ou n'importe quoi?

P. BERGERON (pour la Défenderesse) Examen en chef.

R.—Un "crib", le premier qu'on a descendu, on l'a placé au côté nord de la rivière. Le deuxième qu'on a descendu, les câbles ont cassé de mon côté. Il s'est en allé au milieu.

Q.—Où étiez-vous?

R.—J'étais sur le côté nord.

Q.—Sur la rivière?

R.—Oui.

Q.—Le câble a cassé?

R.—Les câbles, de mon côté, ont cassé. Le "crib" a rangé au milieu de la rivière et s'est placé là.

Q.—Il s'est placé plus au large?

R.—Oui.

Q.—C'est le deuxième que vous placiez, cela?

R.—Le deuxième placé.

Q.—Est-ce l'endroit où vous aviez les ordres de l'amener, cela?

R.—J'avais les ordres de descendre cela. On était plusieurs qui travaillions. Il y en avait au-dessous de moi, quelques hommes en dessous de moi, qui travaillaient.

Q.—Est-ce qu'il s'est placé à l'endroit exact où vous vouliez le mettre?

R.—Non, on avait les ordres de le mettre au raz l'autre.

Q.—Plus près de la rive sud?

R.—Non, près de la rive nord.

Q.—Comment était la base des "cribs", courbée ou droite?

R.—Celle que j'ai vue était droite.

Q.—La base était droite?

R.—Le dessous, oui.

Q.—Avez-vous eu quelque trouble avec un autre "crib" ? Avez-vous connaissance d'un autre trouble avec un autre "crib"?

R.—Il y a eu du trouble avec tous les "cribs".

Q.—Parlez de celui qu'ils ont cherché à mettre entre les deux "cribs", le premier et le second ? Vous dites que le second est allé plus au large, il y avait un espace entre les deux. Voulez-vous dire qu'est-ce qui est arrivé au "crib", qu'ils ont cherché à mettre là?

R.—Là, ce sont des "guides" qui ont cassé sur un côté, on n'a pas pu le placer directement comme on voulait. Après cela, on a travaillé un peu après, on l'a redressé, il s'est placé. Le courant était bien fort, il s'est placé par lui-même entre les deux.

Q.—Il s'est placé par lui-même entre les deux?

R.—Oui.

Q.—Qu'est-ce qui est arrivé là?

R.—Le fond était plus haut que le dessus, le fond était resté plus haut d'un côté que le dessus du "crib".

Q.—Le "crib" était penché?

R.—Oui, le courant l'a penché.

Q.—Le "crib" était penché par en bas?

R.—Oui.

Q.—Qu'est-ce que vous avez fait, continuez à raconter ce qui s'est passé. Vous dites qu'il était "canté" par le bas?

R.—Il était viré un peu quand les "guides" ont cassé. Après cela il a redressé, il s'est replacé.

Q.—Vous dites qu'il a reviré un peu, vous l'avez redressé ensuite?

R.—Ensuite, le courant lui a donné une poussée, il s'est replacé là, il a resté là. Il s'est placé à une place, il est resté là, entre les deux, plus bas.

Q.—Quand il s'est placé, il était plus bas?

R.—Oui.

Q.—Plus bas que quoi?

R.—Plus bas que les autres.

Q.—Y avait-il, à ce moment-là, des "logs" qui poussaient dessus, des "logs" qui étaient dessus?

R.—Je n'en ai pas vu.

Q.—La première chose, vous dites qu'il s'est placé de travers, vous l'avez travaillé et il a descendu plus bas. Maintenant, est-ce le même jour ou est-ce un autre jour, quand il s'est placé de travers que vous l'avez travaillé et qu'il s'est placé plus bas ?

R.—D'un continuel, de suite.

Q.—Travailliez-vous de jour ou de nuit?

R.—Je travaillais de jour.

Q.—Vous finissiez à quelle heure?

R.—Six heures.

Q.—Cela s'est-il passé avant six heures?

R.—Dans ce temps-là, parce qu'on a travaillé plus tard que six-heures, ce soir-là.

Q.—Quand avez-vous commencé à remplir, avez-vous travaillé à remplir?

R.—Non.

Q.—L'avez-vous vu emplir?

R.—Je suis revenu travailler le lendemain matin, il était presque plein.

Q.—Quelle était sa position ? Etait-il à la même place ou était-il changé de place le lendemain?

P. BERGERON (pour la Défenderesse) Examen en chef.

R.—Pour moi, il était à peu près à la même place que quand je l'avais laissé le soir.

Q.—Avez-vous vu des "logs" contre les "cribs"?

R.—Oui.

Q.—Quand les avez-vous vues?

R.—Le lendemain, je crois bien. Je ne peux pas vous dire au juste, au juste, mais je sais bien que les billots sont venus après cela.

Q.—Quand vous dites après cela, après quoi?

R.—Après qu'on a eu placé les "cribs".

Q.—Qu'est-ce que vous avez fait avec les "logs"?

R.—On les a ôtées.

Q.—Les avez-vous toutes ôtées, ou en avez-vous laissé?

R.—On a tout ôté ce qu'on a vu.

Q.—Avez-vous remarqué s'il en restait beaucoup?

R.—On n'en a pas vu.

Q.—Savez-vous s'il en restait ou non?

R.—Je n'ai pas vu, je ne sais pas.

Q.—Avez-vous eu connaissance de travaux de dynamite sur ce qu'on appelle l'île, la partie entre le "by-pass" et la rivière?

R.—Oui.

Q.—Qui faisait cela?

R.—La compagnie Bishop.

Q.—Savez-vous quand c'était cela?

R.—Je ne peux pas vous dire la date, c'est dans le printemps.

Q.—Où en étaient les travaux? Savez-vous en quelle année?

R.—C'était dans l'année...

Q.—Etait-ce avant ou après la pose des "cribs"?

R.—Avant.

Q.—Avez-vous remarqué quelque chose de spécial quant à cette dynamite?

R.—J'avais remarqué que c'était un gros coup de dynamite.

Q.—Où est-il allé?

R.—La roche a revolé partout.

Q.—Partout où?

R.—Il en a revolé dans la rivière, parce qu'elle a cassé un pont fait sur un "cable", elle a cassé cela.

Q.—Y a-t-il eu rien qu'un coup de dynamite qui a envoyé des pierres dans la rivière?

P. BERGERON (pour la Défenderesse) Examen en chef.

R.—Tous les coups ont parti ensemble, ç'a été tout chargé de mine, tout tiré ensemble par une batterie.

Q.—Il y a plusieurs coups, plusieurs mines qui ont parti ensemble?

R.—Plusieurs trous.

Q.—Juste en haut du "coffer-dam", juste en haut de la digue, quelle était la nature du rivage du côté nord? Etait-ce du roc dur, du sable, quoi?

R.—Sur l'île cela?

Q.—Oui.

R.—C'était rien que du roc, de la roche.

Q.—Juste en haut de la digue, quelle était la nature de la roche qu'il y avait là?

R.—Je ne comprends pas.

Q.—Y avait-il à quelque endroit, dans ces endroits-là, un tas de roche cassée?

R.—Oui.

Q.—Où était-il?

R.—Il était en haut des "coffer-dams".

Q.—Petit ou gros?

R.—Il était gros, le tas était gros.

Q.—De quel côté?

R.—Du côté nord.

Q.—Etait-il loin ou près des "coffer-dams"?

R.—Il était près.

Q.—Etait-il à sec ou s'il se rendait jusqu'à la rivière?

R.—Il allait jusque dans la rivière.

Q.—Avez-vous eu connaissance lorsqu'il cherchait à remplir le "toefill", en haut du "crib"?

R.—Oui.

Q.—Qu'est-ce qu'ils ont mis dans ce "toefill" là?

R.—De la terre.

Q.—Rien que de la terre?

R.—Sur le côté nord, au raz le "derrick", il y avait une "track", c'est de la roche, je ne sais pas si c'était du "toefill" pour l'ôter dans le chemin. En haut du "coffer-dam" il y avait une "track" ils dompaient la roche.

Q.—Mais où?

R.—En haut de la"coffer-dam"?

Q.—Dans quoi? Sur la terre ou dans l'eau?

R.—Dans l'eau. Ils ont noyé un char là.

Q.—Ils ont noyé un char?

R.—En travaillant.

Q.—La pierre est allée et le char avec?

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

R.—Oui.
Q.—Etait-ce loin, en haut du "coffer-dam" ou près?
R.—Droit au raz.
Q.—Avez-vous vu le "boom" dont il a été question, qui a été mis dans la rivière, à partir du côté nord jusqu'au "crib" No. 1?
R.—Je l'ai vu.
Q.—Etes-vous capable de me dire où il était attaché? D'abord de quel côté de la rivière, en haut?
R.—Il était attaché après le "coffer-dam".
Q.—Quel "coffer-dam", quel "crib"?
R.—Cela je ne peux pas vous le dire.
Q.—Etes-vous capable de dire de quoi il était fait?
R.—Ce "boom"?
Q.—Oui, quelle espèce de bois, quelle dimension de bois?
R.—Fait avec des billots de seize (16) pieds en partie, percée d'un trou chaque bout.
Q.—Quelle était la longueur des attaches entre chaque billots?
R.—C'était du "cable" qu'ils avaient, "cable" d'acier.
Q.—Quelle longueur d'acier?
R.—Il y avait une distance comme à peu près de trois à cinq pieds entre les bouts des billots.
Q.—Un seul billot ou deux?
R.—Un seul.

Contre-interrogé par Me Saint-Laurent, C. R., procureur des demandeurs:—

Q.—Vous n'avez pas pris de notes par écrit de ce qui s'est passé pendant que vous travailliez pour "Bishop"?
R.—Jamais.
Q.—Vous avez dit que cela faisait cinq ans que vous étiez cultivateur à Notre-Dame du Laus?
R.—Cinq ans que j'étais propriétaire d'une terre.
Q.—Alors, cela ferait en mil neuf cent vingt-huit (1928). Dans quel mois êtes-vous arrivé là?
R.—A Notre-Dame du Laus?
Q.—Oui.
R.—J'ai été élevé là.
Q.—Alors, vous avez acquis une terre il y a cinq ans?
R.—Oui.

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—A quelle époque de l'année avez-vous acquis cette terre-là?

R.—Dans le printemps.

Q.—Le même printemps que vous avez travaillé à creuser les puits avec O'Shea?

R.—Oui.

Q.—C'était avant d'avoir commencé à creuser les puits?

R.—Oui.

Q.—C'était une terre en culture?

R.—Oui.

Q.—Quand vous l'avez acquise, vous avez commencé à la cultiver?

R.—Pas cette année-là.

Q.—Elle n'était pas en culture cette année-là?

R.—J'ai fait les foins seulement.

Q.—Après cela, l'avez-vous cultivée?

R.—Les années ensuite, non, presque pas cultivée, rien que des patates pour mon utilité .

Q.—Une espèce de jardin pour votre utilité?

R.—Oui.

Q.—Vous avez été plutôt entrepreneur de travaux ou employé sur des travaux que cultivateur?

R.—Oui.

Q.—Avant mil neuf cent vingt-huit (1928), vous aviez travaillé à d'autres entreprises? A Kapuskasing, est-ce avant cela?

R.—Oui.

Q.—Il y a combien d'années à Kapuskasing?

R.—Je pense que jai travaillé là... Je ne peux pas dire au juste, mais ça doit être en mil neuf cent vingt-deux (1922) ou mil neuf cent vingt-trois (1923).

Q.—Avez-vous travaillé longtemps-là?

R.—Oui, j'ai travaillé une secousse.

Q.—Combien de temps à peu près?

R.—Je ne peux pas le dire.

Q.—Un an?

R.—Non, je sais que cela n'a pas été un an, mais je ne peux pas dire au juste quel mois.

Q.—Iron Falls, est-ce avant ou après Kapuskasing?

R.—Après.

Q.—Est-ce que vous y avez travaillé longtemps?

R.—Une bonne secousse là aussi. Je dois avoir travaillé là, six, sept mois, je pense.

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—Quel ouvrage faisiez-vous?
R.—"Rigger".
Q.—Qu'est-ce que c'est que cela?
R.—Monter les "derricks", les changer de place, "mover" les "boilers", travailler sur les machineries.
Q.—Aider à placer et à déplacer les machines?
R.—Oui, monsieur.
Q.—A Kapuskasing?
R.—Pareil, la même chose.
Q.—Quand vous avez travaillé pour la Bishop Construction Co. aux Cèdres, quel emploi aviez-vous?
R.—Le même emploi.
Q.—A ces trois (3) endroits, votre emploi consistait à installer, à déplacer les machines?
R.—Toutes sortes d'ouvrages, vous savez.
Q.—Ce sont les trois seules grosses constructions auxquelles vous avez travaillé?
R.—Oui, à part de dans les mines.
Q.—Combien de temps avez-vous travaillé pour la compagnie Bishop?
R.—Je ne peux pas vous dire exactement combien de temps.
Q.—Quelques semaines ou quelques mois, ou avez-vous travaillé tout le temps que les travaux ont duré?
R.—J'ai travaillé au-dessus d'un an, là.
Q.—Quand vous avez travaillé dans le canal de dérivation "by pass" était-ce comme "rigger" aussi?
R.—J'avais l'oeil aux "derricks", rien qu'un "derrick" dans ce temps-là.
Q.—C'était un "derrick" avec une machine qu'ils appellent "orange piel"?
R.—Oui.
Q.—Vous aidiez à la conduite de cette machine?
R.—Ce n'est pas moi qui la conduisait, j'en avais soin. Je la graissais, j'avais l'oeil, quand elle était basse un peu je donnais le signal.
Q.—Combien de temps avez-vous travaillé dans cette excavation-là?
R.—A cet ouvrage-là?
Q.—Oui?
R.—Ensuite, il est venu d'autres "boilers" et des "derricks" et ces affaires-là, on travaillait ensuite à tout placer ces affaires-là, et on avait l'oeil au "derrick" pareil.
Q.—Quand ont-ils commencé à travailler là? Ont-ils ren-

contré de suite en commençant du matériel trop dur pour que "l'Orange piel" morde dedans?

R.—Non.

Q.—Il n'y a pas eu à votre connaissance de matériel trop dur pour que "l'orange piel" morde dedans?

R.—Non.

Q.—L'"orange piel" ne s'est pas brisée sur la dûreté du matériel?

R.—C'est brisée sur les roches, sur des grosses roches.

Q.—Mais à part cela, il n'y avait pas de matériel sur lequel il y avait une espèce de petite couche d'eau où l'"orange piel" ne prenait pas de bouchée?

R.—Où il y avait une couche d'eau, il s'emplisait et se vidait.

Q.—Cela ne descendait pas dans ce qu'il y avait en dessous de l'eau?

R.—Cela s'emplisait, quand il la levait l'eau qu'il y avait dedans avait du sable....

Q.—Y a-t-il des endroits dans le commencement des travaux où c'était trop dur pour l'"orange piel", où ils ont mis des hommes avec des pics et des voiturettes?

R.—Vous voulez dire au pic.

Q.—Des tombereaux?

R.—Et à la pelle, au pic et à la pelle?

Q.—Au pic et à la pelle, avec des tombereaux pour sortir le matériel qui était trop dur pour que l'"orange piel" le prenne?

R.—Après que ç'a été gelé.

Q.—A quelle époque prétendez-vous que ça gèle dans ce pays-là?

R.—Au mois de décembre.

Q.—A quelle partie du mois de décembre?

R.—Il y a des années qu'ils ont des gelées de bonne heure.

Q.—L'année en question, mil neuf cent vingt-huit (1928), à quelle époque prétendez-vous qu'il y a eu une gelée pour faire quelque chose?

R.—Vers le vingt (20), je pense, cette année-là. Je ne peux pas le dire au juste.

Q.—Dites-vous que c'est avant ou après Noel?

R.—Avant Noel.

Q.—Il y a eu de la gelée pour nuire?

R.—Oui.

Q.—Jusqu'à ce moment-là, y a-t-il eu quoi que ce soit

de trop dur pour que l'"orange piel" prenne dedans et pour qu'on soit obligé de faire travailler cela avec des pics et le sortir dans des tombereaux?

R.—Non.

Q.—Vous êtes sûr de cela?

R.—Certain.

Q.—Vous avez très bonne mémoire de tous ces faits-là?

R.—Oui.

Q.—Où avez-vous travaillé aux mois de mai et juin mil neuf cent vingt-six (1926)?

R.—J'ai travaillé pour un de mes frères.

Q.—Où?

R.—A Notre-Dame du Laus.

Q.—A quelle espèce d'ouvrage?

R.—Faire le flottage du bois.

Q.—Votre frère a un moulin, je suppose?

R.—Non, il était contracteur pour la compagnie Maclaren.

Q.—Travaillez-vous habituellement pour la compagnie Maclaren?

R.—Depuis quelques années je travaille pour eux.

Q.—Dans le moment, êtes-vous à leur emploi?

R.—J'ai un contrat avec eux autres.

Q.—Quelle espèce de contrat?

R.—Faire les billots.

Q.—En mil neuf cent vingt-six (1926), où se faisait le flottage du bois?

R.—Sur le lac Poisson Blanc.

Q.—En mil neuf cent trente et un (1931), en mars et avril, où travailliez-vous?

R.—.....

Q.—Il y a deux ans?

R.—.....

Q.—Avec votre mémoire si bonne, ça ne doit pas prendre tant de temps?

R.—Je travaillais pour la compagnie Maclaren.

Q.—Qu'est-ce que vous faisiez pour elle?

R.—Je faisais la "slash".

Q.—Où?

R.—Sur le Lac Poisson Blanc?

Q.—Qu'est-ce que vous voulez dire par faire la "slash"?

R.—Bûcher, brûler le bois, où c'était pour être inondé.

Q.—Sur le Lac Poisson Blanc?

R.—Oui.

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—Est-ce un des lacs qui se trouvent en haut des Cèdres ?

R.—Oui.

Q.—Ce n'était pas encore inondé dans ce temps-là?

R.—Mil neuf cent trente et un (1931) ?

Q.—Oui, les travaux avaient été finis au printemps mil neuf cent trente (1930), cela n'a pas dû prendre un an pour inonder cela?

R.—Peut-être que je me trompe d'année.

Q.—Je vous le demande?

R.—Si c'est en mil neuf cent trente (1930) c'est en mil neuf cent trente (1930) que je veux dire ce que je vous dis là.

Q.—Moi je demande où vous travailliez il y a deux ans, en mil neuf cent trente et un (1931)?

R.—Je travaillais pour moi-même en mil neuf cent trente et un (1931).

Q.—Sur votre terre?

R.—Sur ma terre.

Q.—Quel ouvrage y avait-il à faire en mars et avril sur la terre?

R.—Pas grand'chose, bois de poêle, ces affaires-là.

Q.—Vous ne gardiez pas un nombre considérable d'animaux?

R.—Pas beaucoup d'animaux.

Q.—Qu'est-ce que vous aviez comme animaux?

R.—J'avais des vaches, des chevaux, des cochons, des poules, ces affaires-là.

Q.—Est-ce que vous jurez qu'en mars et avril mil neuf cent trente et un (1931), vous aviez des vaches, des chevaux, des cochons et des poules?

R.—Avril mil neuf cent trente et un (1931), oui..

Q.—Combien aviez-vous de vaches?

R.—Je ne me rappelle pas au juste là, combien j'avais de vaches.

Q.—Une douzaine?

R.—Pas une douzaine de vaches à lait, non. J'avais une couple de vaches à lait, dans ce temps-là, des taurailles, des veaux, je ne faisais que commencer à me gréer.

Q.—Aviez-vous passé tout l'hiver sur votre terre?

R.—Non.

Q.—Qui faisait le train pendant que vous étiez là?

R.—Un homme engagé.

Q.—Un homme engagé que vous aviez gardé tout l'hiver?

R.—Il venait faire le train seulement, c'était mon voisin.

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—Quel était cet homme?
R.—Un nommé Valiquette.
Q.—Il était engagé pour aller faire le train chez vous?
R.—Il venait faire mon train soir et matin.
Q.—A quelle distance restait-il de chez-vous?
R.—Un demi mille.
Q.—Quel est le premier nom de ce Valiquette?
R.—Marc Valiquette.
Q.—En mars et avril vous n'en aviez pas besoin, vous étiez chez vous?
R.—Oui.
Q.—En février?
R.—Je n'étais pas chez nous, je travaillais.
Q.—Où travailliez-vous?
R.—Je travaillais dans un chantier .
Q.—Pour la compagnie Maclaren?
R.—Oui.
Q.—Janvier?
R.—En chantier.
Q.—A quelle époque étiez-vous parti pour les chantiers?
R.—Dans l'automne.
Q.—Et vous étiez resté là jusqu'au mois de mars?
R.—Non, je descendais souvent, ce n'était pas loin.
Q.—Vous ne pouvez pas dire si c'est six ou sept hommes que vous aviez avec vous pour creuser les puits d'O'Shea?
R.—A peu près cela, six hommes avec moi.
Q.—Quel est le premier que vous avez commencé?
R.—C'est difficile de vous le dire ici.
Q.—Vous pouvez nous dire si c'est en haut de la ligne où la "dam" a été placée ou en bas de cela? Si c'est le plus proche de la rivière ou le plus loin de la rivière?
R.—C'a été en bas de la ligne, où la "dam" est.
Q.—Combien y en a-t-il eu de placés en bas de la ligne de la "dam"?
R.—Je ne peux pas vous dire cela au juste. La ligne de la "dam" a été de même. Après cela, on a fait des trous, on a piloté cela, je ne peux pas vous le dire au juste.
Q.—Vous ne pouvez pas dire s'il y en a eu rien qu'un en bas de la ligne de la "dam" ou plus qu'un?
R.—Pour le dire au juste, je ne suis pas capable de le dire.
Q.—Est-ce que le matériel que vous avez trouvé dans ces trous a été le même genre de matériel du haut jusqu'en bas?
R.—Dessus, il y avait de la terre jaune, un peu.

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—Quelle épaisseur de terre jaune?
R.—Une couple de pieds, je n'ai pas mesuré.
Q.—Au meilleur de votre connaissance, une couple de pieds. ensuite, c'était du sable et du gravier?
R.—Du sable, du gravier, des grosses roches.
Q.—Vous dites que vous boisiez cela?
R.—Oui.
Q.—Est-ce que vous les boisiez jusqu'au fond des trous?
R.—Oui.
Q.—Des quatre côtés?
R.—Oui.
Q.—Vous creusiez cela à peu près carré?
R.—Carré.
Q.—Comment était-ce boisé ? Etait-ce avec des planches piquées sur le long ou de travers?
R.—Piquées sur le long.
Q.—Comment étaient-elles retenues ces planches? Etaient-elles clouées?
R.—On avait un "rack" de fait en dedans, en dedans dans les trous, on descendait les planches à mesure qu'on ôtait le terrain. On fessait sur les planches pour qu'elles descendent pour pas que ça déboule.
Q.—Quelle était la longueur de ces planches-là?
R.—La première planche dont je me suis servi avait seize pieds de long.
Q.—Pour les descendre vous fessiez sur le dessus?
R.—On s'est fait un "stand" pour monter pour frapper dessus.
Q.—Un échafaudage?
R.—Un petit échafaudage.
Q.—Aviez-vous une clôture quelconque autour de ces trous pour empêcher les animaux de tomber dedans?
R.—Le soir, oui, une petite clôture.
Q.—Et vous avez descendu ces trous, dites-vous, une vingtaine de pieds?
R.—Environ, oui.
Q.—Y en a-t-il où vous vous êtes servi de tarrière?
R.—Un trou, oui.
Q.—Quelle profondeur avez-vous percé avec la tarrière?
R.—Je ne peux pas vous dire comment.
Q.—Une couple de pieds?
R.—Plus que cela.
Q.—Cinq, six pieds?
R.—Oui, il devait être au-dessus de cinq, six pieds.

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—Combien au-dessus?
R.—Je ne peux pas vous le dire au juste.
Q.—Vous avez un bon souvenir de cela?
R.—C'est malaisé de dire combien de pieds.
Q.—Cette tarrière, est-ce que c'était bien long?
R.—C'était une grande tarrière qu'on avait.
Q.—Tarrière de quelle longueur?
R.—Je pense que cette tarrière aurait dû avoir dans les dix, douze pieds de long, je ne l'ai pas mesurée.
Q.—Etait-ce une chose qui s'allonge ou une affaire absolument fixe?
R.—Une poignée qu'on avait pour l'allonger à mesure qu'on descendait.
Q.—Il y avait une tige et votre poignée pouvait changer de place sur la tige?
R.—Oui.
Q.—Mais, rien qu'une tige fixe d'une douzaine de pieds de longueur ,est-ce cela?
R.—Une douzaine de pieds, je ne peux pas dire au juste, c'est une affaire à laquelle je n'ai pas porté attention.
Q.—Qui avait fourni cette tarrière-là?
R.—M. O'Shea, je pense.
Q.—Est-ce vous qui avez engagé les hommes?
R.—Oui.
Q.—Est-ce vous qui avez fourni ou acheté les pics et les pelles?
R.—Non, la compagnie.
Q.—La compagnie Maclaren?
R.—Oui.
Q.—Est-ce vous qui êtes allé les chercher, qui les avez apportés à cet endroit-là?
R.—Oui.
Q.—Où êtes vous allé prendre cela?
R.—A Notre-Dame du Laus, une office là.
Q.—Il y avait un dépôt à Notre-Dame du Laus et vous êtes allé chercher ces choses-là?
R.—Oui.
Q.—Aviez-vous apporté la tarrière de la même place?
R.—Ce n'est pas moi qui l'ai apporté la tarrière.
Q.—Seulement les pelles et les pics que vous avez apportés?
R.—On a apporté des pics, des pelles, un câble et du bois.
Q.—Les chaudières?

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

R.—Les chaudières on a apporté cela le lendemain quand on a vu que c'était trempe on a apporté les chaudières.

Q.—Quelle espèce de pompe y avait-il?

R.—On a eu deux sortes de pompes.

Q.—Des pompes à bras?

R.—Une pompe à bras et une pompe à gazoline.

Q.—Vous, est-ce que vous avez travaillé dans les trous ou si vous êtes resté à diriger cela à la surface?

R.—Je travaillais moi aussi.

Q.—Je ne dis pas que vous ne travailliez pas. Mais êtes-vous allé dans les trous ou si vous êtes resté à diriger?

R.—J'ai été dans les trous.

Q.—Dans tous les trous?

R.—Oui.

Q.—Pour pelleter et pour inspecter?

R.—Pour inspecter et aider, parce que c'était bien dur dans le fond pour travailler, c'était trempe, cinq, six hommes, on y allait chacun notre tour pour qu'on soit tous égaux.

Q.—Pelleter un bout de temps et ensuite faire faire....

R.—Oui.

Q.—Est-ce qu'ils vous sortaient avec un câble?

R.—On montait avec une petite échelle qu'on avait, une manière d'échelle.

Q.—Quand vous avez travaillé pour aider à placer les "cribs", était-ce encore comme "rigger" autour des machines que vous travailliez?

R.—Oui.

Q.—Vous dites qu'il y a eu du trouble avec tous les "cribs", ce que vous voulez dire, c'est de placer des "crib" dans un courant, c'est un travail assez difficile tout le temps, n'est-ce pas?

R.—Oui.

Q.—Evidemment, quand les "cribs" se plaçaient dans le courant, il fallait y prendre garde, il fallait faire attention, n'est-ce pas?

R.—Il fallait être bien emmanché.

Q.—Et y prendre garde? C'est M. Lindskog qui dirigeait cela?

R.—C'est lui qui était le surintendant des travaux.

Q.—Et qui donnait les ordres, n'est-ce pas?

R.—Donnait les ordres aux gens.

Q.—Quand les "cribs" se plaçaient, il venait surveiller cela lui-même, n'est-ce pas?

R.—Il était partout où les travaux étaient, il voyait à tout.

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—Mais, pendant que les "Cribs" se descendaient pour se placer, il venait y voir et donner les ordres?

R.—Certainement, oui, il donnait les ordres, ce n'est pas d'autres.

Q.—Vous dites que vous vous rappelez que quand le deuxième "crib" a été descendu, les câbles ont cassé et qu'il s'est rangé plus au sud que l'endroit où on voulait le mettre?

R.—Oui.

Q.—Vous avez dit, je crois, que le câble de votre côté avait cassé ? Vous étiez sur quel côté, vous?

R.—Côté nord.

Q.—Le côté nord, c'est le côté de l'île?

R.—Oui.

Q.—C'était le côté où étaient les machines?

R.—Oui. Il y en avait sur les deux côtés, des machines.

Q.—Le gros des machines était installé n'est-ce pas sur le côté nord?

R.—Tous les "crushers" et les malaxeurs à ciment étaient tous sur le côté sud. Le plus gros "boiler" aussi était du côté sud.

Q.—Quand le deuxième "crib" s'est rangé comme cela, plus au sud que ce que vous aviez voulu, y avait-il des billots dans la rivière?

R.—Pas cette journée-là, non.

Q.—Vous êtes sûr de cela?

R.—Je n'en ai pas vu.

Q.—Il n'y a pas de billots qui flottaient dans la rivière et qui sont même venus à l'encontre du "crib" pendant qu'il descendait.

R.—Non.

Q.—Qu'est-ce qui a cassé le câble?

R.—Ca doit être parce qu'il n'était pas assez fort.

Q.—Quelle espèce de câble était-ce?

R.—Du câble de cinq (5) lignes.....

Q.—Il en a cassé trois brins d'un câble de cinq (5) lignes?

Q.—C'était du câble d'acier?

R.—Cable d'acier.

Q.—Il y avait de chaque côté trois brins ou y avait-il plus de trois (3) brins? Je vais vous poser la question autrement: combien y avait-il de brins de cable retenant le "crib" pendant qu'on le descendait?

R.—Sur mon côté il y en avait trois (3).

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—Ils ont cassé tous les trois?

R.—C'est là "snob" qui a cassé. On avait trois cables attachés après le "crib", il y avait un "snob" attaché après une grosse, grosse roche, on avait trois tours de cable autour de la roche, les poulies étaient "snuggées' 'après cela pour laisser descendre le "crib".

Q.—Ce sont les poulies?

R.—Les poulies.

Q.—Les cables n'ont pas cassé comme cela?

R.—C'est le cable, le "snug" qui a cassé.

Q.—Est-ce qu'il y a de ces cables qui couraient depuis la "snug" au "crib", ou un câble qui empêchait les autres de se dérouler trop vite?

R.—C'est un câble qui tenait celle-là.

Q.—Pour les empêcher de dérouler trop vite?

R.—Non, c'est le cable qui tenait les poulies.

Q.—Le câble qui tenait les poulies, quelle espèce de câble était-ce celui-là?

R.—Du câble de cinq (5) lignes.

Q.—Alors, est-ce qu'il y avait trois brins de cinq lignes retenus seulement par un brin de cinq lignes?

R.—Tous les trois brins de cinq lignes. Les trois câbles qui tenaient le "crib" se trouvaient à serrer dans ces trois (3) là.

Q.—Et ces trois là ont cassé?

R.—Ces trois-là ont cassé.

Q.—Tout simplement par la poussée du courant ou y a-t-il eu autre chose?

R.—Il n'y a pas eu autre chose, c'est par la poussée du courant.

Q.—Vous rappelez-vous quel jour ou à quelle date on a descendu le "crib" qu'on voulait placer entre celui qui s'est rangé du côté sud et le premier qui avait été placé?

R.—Je ne me rappelle pas quelle journée, quel quantième.

Q.—M. Lindskog y était ce jour-là?

R.—Oui.

Q.—Et vous faisiez partie de la gang de jour?

R.—Oui.

Q.—Vous travailliez comme "rigger"?

R.—Oui.

Q.—Y a-t-il eu une interruption de travail quand votre temps a été fini ou si un autre est venu vous remplacer de suite?

R.—Le soir?

Q.—Oui?

R.—Personne ne me remplaçait.

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—Ils travaillaient de nuit?

R.—Oui.

Q.—Votre "job" n'était pas assez importante pour qu'il faille quelqu'un pour la faire la nuit?

R.—Il y avait seulement un homme la nuit pour voir à tout le graissage, ces affaires-là.

Q.—Le jour?

R.—Le jour on était sept, huit, des fois dix.

Q.—Vous étiez sept à huit et un seul faisait le même ouvrage la nuit?

R.—On ne travaillait pas après ces affaires-là la nuit.

Q.—Avec quoi par exemple faisaient-il le remplissage des "cribs", avec du roc, on se servait de "derrick" pour cela?

R.—Oui, mais il y avait un homme qui "runnait" le "derrick". Ce n'est pas nous autres qui runnaient" cela.

Q.—Qu'est-ce que vous faisiez ce jour-là où on a descendu le "crib" en question?

R.—On travaillait après le "crib", on plaçait les câbles, on avait l'oeil aux poulies, on "slakait" les poulies.

Q.—Vous dites que ç'a duré jusqu'à la fin de cette journée-là?

R.—A descendre le "crib"?

Q.—Oui?

R.—Oui, on a fini le soir vers sept heures, je pense.

Q.—Et quand vous avez cessé de travailler, il n'avait pas encore été placé de pierre dedans, on n'avait pas encore commencé à le charger?

R.—Non. Je me suis en allé souper.

Q.—Vous êtes certain de cela?

R.—Quand je suis revenu le lendemain matin, il y avait de la pierre dedans.

Q.—Mais quand vous êtes parti pour aller souper, il n'avait pas encore été mis de pierre?

R.—Non, cela ne faisait rien que d'arriver.

Q.—Qu'est-ce qu'il tenait?

R.—Ce sont les "câbles."

Q.—Il était encore attaché sur les câbles quand vous êtes parti?

R.—Oui. Quel "cribs" que c'est cela?

Q.—Celui qui se trouvait placé entre le premier et le deuxième. Je comprends que le premier s'est placé du côté nord, le deuxième, vous vouliez le mettre à côté du premier, il s'est rangé plus au sud, et ç'a laissé une espace entre les deux?

R.—Oui.

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

Q.—Et vous en avez descendu un pour le mettre dans cet espace-là?

R.—Oui.

Q.—Vous dites que celui-là vous avez eu un peu de trouble, d'abord, qu'il a accroché, que vous l'avez redressé et qu'il est entré entre les deux?

R.—Oui.

Q.—Quand vous êtes parti de votre travail, le soir, il était là, il était attaché avec des câbles?

R.—Oui.

Q.—Il n'y avait pas de pierre dedans?

R.—Non.

Q.—Le lendemain, quand vous êtes revenu, il y avait de la pierre dedans?

R.—Oui.

Q.—C'est cela que vous dites, on se conmprend bien là-dessus?

R.—Oui.

Q.—Avez-vous expliqué vos souvenirs quant à ces faits-là à quelqu'un, avant de venir à la Cour ici?

R.—Expliquer mes souvenirs?

Q.—Avez-vous raconté ceci dernièrement à qui que ce soit ?

R.—A M. Aylen.

Q.—A part de M. Aylen, avez-vous été questionné à ce sujet-là?

R.—Par M. Kennv.

Q.—Dernièrement ? ou y a-t-il longtemps?

R.—Il y a trois (3) semaines, je pense.

Q.—Quant le procès a commencé?

R.—Je ne sais pas quand le procès a commencé.

Q.—Mais il y a environ trois (3) semaines?

R.—Oui.

Q.—D'après ce que j'ai compris, vous dites que sur l'île on avait percé plusieurs trous mais qu'on a fait sauter toutes les mines en même temps?

R.—Oui.

Q.—Il n'y a eu qu'un gros coup, comme cela?

R.—Rien qu'un gros coup.

Q.—Cela c'était au printemps avant la pose des "cribs"?

R.—Oui.

Q.—Vous avez dit que vous aviez vu de la roche qui avait été placée dans la rivière, en haut de l'endroit où les "coffers" ont été placés, est-ce que ce n'est pas dans la baie?

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

R.—Elle se trouvait droit dans le bout de l'île.

Q.—Où était le pilier du côté nord ? Est-ce qu'il n'était pas au bord de l'île?

R.—Au bord de l'île, en montant le courant, le pilier était à côté ici.

Q.—Le tas de pierre se trouvait dans la baie en haut de l'île?

R.—Sur la pointe plutôt, sur la pointe de l'île.

Q.—Vous avez déjà regardé des plans de tout cela?

R.—Un peu.

Q.—Nous allons regarder les pièces, plan P-2 et P-37. Ceci est le plan de la rivière avant qu'il se fasse des travaux. Vous voyez l'endroit étroit entre l'île et la rive sud, et vous voyez la baie qu'il y a en haut de l'île. Maintenant, sur P-37, vous voyez où le pilier du côté nord a été placé. Vous voyez la même baie, pilier du côté nord et pilier du côté sud. En regardant cela, pouvez-vous nous dire où d'après vous, a été placé le tas de roche?

R.—Le tas de roche était ici, dans les environs de l'endroit que je vais mettre "Ber".

Q.—Il y avait un "derrick", où se trouvait le "derrick ? A peu près en arrière du premier pilier?

R.—A peu près.

Q.—A peu près à l'endroit où se trouve la pointe de la flèche qu'il y a avant le mot "coffer-dam", à peu près au bout de cette flèche?

R.—Oui, il était dans les environs de cela.

Q.—Il a été produit une photographie comme P-105, je vous invite à regarder cette photographie, vous voyez ici le pilier No 1, vous voyez votre "derrick", est-ce que cette pile se trouve visible venant jusqu'au bord de l'eau est la pile de roche dont vous parlez ? Est-ce comme cela que vous vous rappelez que c'était ?

R.—Oui. Le tas de roche était plus gros.

Q.—Il est devenu plus gros que cela ? mais il était à ce même endroit-là?

R.—Oui.

Q.—Vous dites qu'à un moment donné on a amené de la roche là aussi avec un char qui a glissé dans la rivière, était-ce le même tas de roche cela?

R.—Plus bas un peu.

Q.—Avez-vous eu connaissance qu'on ait mis du foin et

PIERRE BERGERON (pour la Défenderesse) Contre-interrogé

des brouissailles dans l'eau pour essayer d'envoyer cela au pied du "coffer-dam"?

R.—Je me suis aperçu qu'il envoyait cela.

Q.—Alors, est-ce de la roche qu'il apportait pour faire caler les broussailles et le foin?

R.—Je ne peux pas vous le dire.

Q.—Vous rappelez-vous si après avoir fait des ballots de broussailles et de foin on a apporté de la roche pour envoyer sur ces ballots de broussailles et de foin?

R.—Je n'ai pas travaillé dessus. Je n'ai vu cela qu'en passant.

Q.—Etait-ce pendant ce temps-là que vous avez vu que le char amenait de la roche?

R.—Oui.

Q.—Alors, vous ne savez pas si c'est pour cela ou non?

R.—Non.

Q.—Quant au "boom", tout ce que vous savez, c'est qu'il y avait un "boom" qui était en billots reliés avec des cables, c'était un "boom" temporaire cela? Vous avez vu sur des "drives" des "booms" permanents meilleurs que cela, n'est-ce pas?

R.—Oui.

Q.—Avec trois au quatre morceaux de bois équarris et beaucoup plus solides que ce qu'on peut faire avec un seul billot attaché avec des cables?

R.—Oui.

Q.—Les Maclaren se servent-ils de "boom" de plusieurs pièces de bois équarries, l'une à côté de l'autre, reliées avec des chaînes à certaines places dans les travaux?

R.—Oui.

Q.—Des "booms" assez larges pour servir d'espèce de trottoir, qu'on peut même marcher dessus?

R.—Oui.

Q.—Ceux-là, d'après votre expérience, retiennent beaucoup mieux le bois qu'un billot rond seul?

R.—Ca doit, oui.

Q.—Le bois ne passe pas aussi facilement en dessous d'un "boom" de plusieurs pièces carrées qu'en dessous d'un seul billot rond?

R.—Il ne doit pas, non.

Q.—Vous avez une certaine expérience dans la "drive"?

R.—Un peu.

Q.—Vous avez vu des endroits où des "booms" de plusieurs pièces de bois équarries retenaient une grande quantité de bois?

R.—C'est plus fort, oui.

Q.—Cela s'entassait plusieurs billots d'épaisseur?

R.—Quand il a trop d'épaisseurs, il passe dessous pareil.

Q.—Avez-vous déjà vu des "booms" placés en 'V' pour retenir le bois?

R.—Non.

Q.—Ce "boom" temporaire, savez-vous à quoi il servait?

R.—Je ne me suis jamais occupé pour voir qu'est ce que c'était.

Q.—Vous n'avez pas vu qu'il servait à diriger les billots vers le "by-pass"?

R.—C'est cela que j'ai toujours pensé.

Et le déposant ne dit rien de plus.

DEPOSITION OF JOHN BOYD

A witness examined on behalf of the Defendant.

On this eighth day of March, in the year of Our Lord one thousand nine hundred and thirty-three personally came and appeared John Boyd, of the City of Sudbury, in the Province of Ontario, Construction Superintendent, aged 44 years, a witness produced and examined on behalf of the Defendant, who, being duly sworn, deposes as follows:

Examined by Mr. Aylen, K. C., of Counsel for Defendant:—

Q.—How long have you been engaged in construction work?

A.—For the last twenty six or twenty seven years.

Q.—I understand you have prepared a list of the principal work in which you have been engaged?

A.—I have.

Q.—I notice your list begins by stating you had High School and Technical School education in Scotland. What was the nature of the technical education you had?

A.—General construction.

Q.—The first work you have noted was in 1908, and you state that from 1908 to 1910 you were in the United States on

general construction. What was your particular work at that time ?

A.—Mostly on carpentry work, and things like that — all types of construction.

Q.—In 1910 you were engaged on cofferdam on the Trent Valley Canal. Will you tell His Lordship what you did there?

A.—I was on the cofferdam at Healey Falls, working on the cofferdam. I did not have any authority: I was just working on the cofferdam.

Q.—From 1911 to 1914 you say you were on bridge work. What was the nature of the work you did in connection with bridges?

Witness:—Do you mean in 1913 and 1914, or before that?

Counsel:—1911, 1912, 1913, and 1914.

A.—I was Superintendent of Bridge Work on the C. P. R. double track, Lake Superior Division.

Q.—What was the nature of the bridge work?

A.—Bridges, abutments, piers, culverts, — all types of construction in connection with railroad work.

Q.—During the war years you were overseas, in the Engineers?

A.—Yes.

Q.—What sort of construction work did you have to do there?

A.—Again all kinds, principally bridging.

Q.—What rank did you have when you started?

A.—Full private, I guess. You always start that way.

Q.—And, what rank did you have when you finished?

A.—Acting Captain.

Q.—What work did you do after the war?

A.—I was Resident Superintendent for the Province of Quebec for the D. S. C. R. (Department of Soldiers' Civil Re-establishment) on buildings, alterations, and repairs, to schools, hospitals, etc.

Q.—In 1920 you were back on bridge work for the C. P. R. ?

A.—Yes.

Q.—And, later, for the Canadian National Railway?

A.—Yes.

Q.—Was cofferdamming work required in connection with that bridge work?

JOHN BOYD (for Defendant) Examination in chief.

A.—Yes. There were repairs to foundations for the C. P. R., on their main lines ; overhauling bridges, and cofferdams, and repairs to foundations. The same thing on the Canadian National — that was new construction.

Q.—According to the statement you have handed me the years 1923 to 1929 are grouped together. What were you doing during that time?

A.—I was General foreman and field superintendent for the Duke Price Company, and the Aluminum Company of Canada, on the Saguenay Development.

Q.—Did you have anything to do with cofferdamming there?

A.—Yes.

Q.—On the Saguenay River?

A.—Yes.

Q.—Did you have charge of this cofferdamming on the Saguenay?

A.—Yes, I was in charge of the cofferdamming on certain parts of the work, not all of it.

Q.—Will you file this Statement of your experience, to which we have been referring, as Exhibit D-6 of the Defendant?

A.—Yes.

Q.—Since you seem to have had considerable experience with construction in water, I will ask you first about cofferdamming. Have you built cofferdams in rivers of approximately the size of the Lièvre River?

A.—I saw the Lievre River last week. I did not see it before the dam was put in.

How wide is the Lievre?

Q.—You have built dams on rivers as big as or bigger than the Lievre?

A.—Yes.

Q.—What is the first step in a cofferdam construction on such a river?

A.—You are not tied down to any one site in a cofferdam. You always select or locate the cofferdam by taking soundings. You can move your cofferdam five or ten feet one way or the other and it does not interfere with your construction.

When you have decided on the site of the cofferdam, you proceed to take soundings.

JOHN BOYD (for Defendant) Examination in chief.

Q.—At what distance apart did you take soundings on the jobs on which you have built cofferdams?

A.—We never exceeded two feet centres.

Q.—In your opinion, would soundings 20 feet apart be sufficient in the building of a cofferdam?

A.—Oh, no.

Q.—What would you say to ten feet?

A.—Too far apart.

Q.—Will you tell us why it would be too far apart? What might occur?

A.—The crib of a cofferdam is simply a basket, you might call it, to hold the material of sufficient weight to hold back the flow of the river. If it does not fit the bed of the stream, then when you deposit the material, providing it is fine (or even without it being fine) the water will wash it clean out. In other words, there are voids created where you have absolutely no control. The timbers have to go down, not absolutely tight but I would say within about 6 inches of the bottom of the stream at any one point. Of course, you touch the different points around. You have to avoid voids.

Say you are going along with your cofferdam, and you are taking soundings 10 feet apart, there may be a boulder in the line of the cofferdam, which you may miss, and she will tip your crib when it comes down on top of her, and it will cant. If you dump a section of your cofferdam in there it may land on top of this boulder which forms a projection in the river, and you have no control over it, and the water will keep on going through.

A lot depends then on the material you fill the crib with. If you take out run of the quarry, there are a lot of fines going in. Those fines will wash out and be deposited below your cofferdam.

What we were in the habit of doing, and what I have been in the habit of doing all along, if the material is too fine, after the cofferdam is built we sheet it inside with slats — planks — placed about 3 inches apart, so that the fines will be confined in the cofferdam, and the flow of the water has no effect on them.

Q.—I take it the purpose of taking those soundings at the intervals you suggest as necessary is to build the cribs to fit the bottom of the river?

JOHN BOYD (for Defendant) Examination in chief.

A.—To take up on any irregularities in the bottom of the river.

Q.—And, is that a necessary precaution to take?

A.—Yes, because the cofferdam is one of the principal things in water construction. If the cofferdam is not tight, you will spend a lot of money fighting the water.

Q.—If you were engaged in charge of building a cofferdam, and you were given a plan showing apparently that the bed of the river was ledge rock at certain points 20 feet apart across the river, how would you proceed to build the cofferdam?

A.—I would take soundings at once.

Q.—You would not consider that was sufficient information upon which to go ahead?

A.—No. How many rows of soundings 20 feet apart would there be?

Say you are taking 15 feet of water, the bottom of your cofferdam would be 20 feet wide: that means you might have no soundings at all on the whole width of your cofferdam.

Q.—Supposing the person building the cofferdam supplemented that information by taking soundings 10 feet apart across the river would you consider he would have sufficient information to go ahead?

A.—No, because with the irregularities of the bottom of the river you can never tell what you are going to get.

Q.—I understand they build abutment cribs on the banks. Is that the first step?

A.—The regular procedure is to take the soundings, and start from the banks. You get in your two abutments or anchor-cribs, one on each side. Then you select the place to build your cribs.

After you have taken soundings,you got them down on paper, and get your layout, and as the cribs are going to be floated into place you build them in a certain position, and they are floated to where they are going to be sunk. Then they are floated into position, and you anchor them. If it is not swift water, it can be done by mechanical devices. You float them down into position.

Q.—Supposing one of the cribs got down too far would it be an easy matter to pull it back?

A.—Absolutely not. It is imperative at all times, in swift

water, that you have full control of your cribs, because if they get away from you they are gone, and you have to lose them

Q.—Will you please continue now with your explanation of cofferdam building? What have you to say about the distance between the cribs?

A.—The cribs should be practically touching one another, because you have to get your sheeting down on the faces of the cribs; and if you do not get them touching one another then you have to put in false work between them in some way, to hold the sheeting.

The pressure on the sheeting is on the bottom, to a great extent. The bigger pressure is down below, and if you have voids down in there, there is nothing to hold your sheeting.

Q.—In cofferdamming what is the practice as regards the placing of the sheeting?

A.—Where it is at all possible a diver should be employed to go down and examine the bottom, and follow the sheeting along. If you get into very swift water, you may find you are not making much progress. In swift water you may see it is dangerous to send a diver down, and you may figure there are voids in the bottom. Every crib should be enough to stop the flow of the river, to a certain extent, without the sheeting on it a all. Of course, you have to raise the river quite considerably, and it should be so that there should be practically dead water in front of the cribs.

Q.—As I understand it if the cribs are placed sufficiently close together they would stop the water to a large extent?

A.—Yes, because there should be no voids in there where there would be danger of a man being sucked in. There should be no voids, otherwise there will be a bad leak in the crib.

Q.—What is the practice in placing the sheeting? How is it customarily placed?

A.—If you are not so very sure about the bottom, and figure may be there are a few voids in there which you have not been absolutely able to take care of even with two foot soundings, the usual thing to do is to drive down a temporary sheeting in the face of the crib, to get the bottom in all places.

The way the bottom is found is by sounding along with a long rod. You can always tell when you are down on the hard ground. It is all right then for a diver to go down, in the majority of cases.

Then we drive another row of sheeting on the face of that. The first row of sheeting has been a protection for the diver, in case there should be any suction in the bottom to run him into a bad hole.

I am now talking about tough material — other material — on top of rock, because if you are on solid rock there is no necessity to go to that expense.

Q.—Supposing you are building a cofferdam on solid rock, or believe you are on solid rock, how would you go ahead with the sheeting?

A.—I would simply send a diver down, if I had confidence that the bottom was all right, to fit my sheeting to the bottom.

Q.—What would the diver do?

A.—Fit the sheeting to the bottom. And, if it was not exactly ledge he would plug the holes.

Q.—How would he fit the sheeting to the bottom?

A.—He could take a big nail, or anything at all, and shape the stuff to the bottom. He can do it all right. He would carry a marker of some kind with him.

Q.—As I understand it, he would mark the plank to the approximate shape of the bottom, and it would be drawn up and cut ?

A.—Yes.

Q.—And, is that the way it was done in the cofferdam work upon which you have been engaged?

A.—Yes, where we had need for a diver. Of course, often you may save the expense of a diver by taking a sounding rod and finding the difference in the bottom between 6 inches. If the plank is 6 or 9 inches wide, and if you sharpen the end of it slightly you can get the difference of the slope on the rock. You can sharpen the end slightly, and broom the bottom of it, as we call it — that is to say, we put it down, and put a hammer on top of it, and broom it hard down.

Q.—You have to be satisfied, in some way, that the sheeting fits the bottom?

A.—Yes.

Q.—Supposing there was an over-burden on the bed of the river where you were building a cofferdam, would it make any difference in the methods you would adopt?

A.—Well, a lot depends on the depth of the over-burden. If you figure you have too much over-burden, and it is hard stuff,

it would mean driving. I would suggest steel sheet piling right away, instead of the timber sheeting. I would not hesitate at all, because timber sheeting is hard to drive.

You can drive a style of timber sheeting which we call Wakefield Sheeting — three planks bolted together.

Q.—Would that be a suitable kind of sheeting to use when there was bare ledge rock in the river bottom?

A.—I would not go to the expense of that sheeting. I would put it down in single pieces. I figure I would make myself quite water-tight in that way.

Q.—Supposing the cribs had been placed on some over-burden, instead of on ledge rock, would that be a vital difficulty in the dam from the start?

A.—No.

Q.—Supposing you found that the cribs were on an over-burden of gravel, stones, and so on, instead of being on ledge, how would you proceed with your work?

A.—I would find that out by my soundings. The soundings would tell me what the bed of the river was.

Q.—So, the soundings would show the depth, and the nature of the material?

A.—Yes.

Q.—How would you proceed with your sheeting if the cribs were on an over-burden?

A.—I would feel inclined to put in a clam-shell or an orange-peel, if there was any depth at all, and I figured there were any boulders in the material. If it was hard going, or driving, I would be inclined to excavate it in sections ; that is to say, clam out a small section of about 4 feet under water. Then I would drive my sheeting. You cannot drive timber sheeting through boulders : it is impossible. It has to be cleaned out, but there is very little danger of scour if you take it in small sections : in fact, there is no danger of scour if you take it in small sections.

Q.—Supposing there was some broken rock from an excavation upstream from the sheeting, what effect would it have?

A.—You could not drive the sheeting down. You would have to take it out.

Q.—If it was put after the sheeting, as toe fill?

A.—It would be porous. It would not be tight.

Q.—It would not be an impervious toe fill?

A.—No.

JOHN BOYD (for Defendant) Examination in chief.

Q.—What is the function of the toe fill? Is it used in case the sheeting has not been properly fitted?

A.—Your dam has to be pretty nearly right before you put in toe fill, because if you have a big leak toe fill will not hold it.

Q.—Do I understand, then, some effort should be made to ascertain whether or not the dam is actually water tight, before any toe fill is placed above it?

A.—Certainly.

If you have a diversion dam, or a by-pass channel, you can pretty well tell by the flow of the water through the by-pass. You can measure the water, and you can almost tell if there is a leak in the dam. If you turn the whole flow of the stream through your by-pass, naturally you can tell how much water is flowing in the by-pass. If the water is not coming up in the by-pass, naturally there is a leak somewhere.

Q.—Supposing we find that in spite of the fact we have sheeted the cofferdam, there is still a leak ; how would you proceed to remedy the situation?

A.—I would have a diver go down and examine the bottom.

Q.—Would he go down upstream or downstream from the cofferdam ?

A.—Upstream.

Q.—Supposing there had been toe filling already placed, could you do any good?

A.—You have to take care. A lot depends on the size of the leak. If you think by the feel of the sounding that you are putting the diver down into a dangerous position, you have to try to get some sheeting down the front before he goes down, and temporarily stop the leak. You have to be sure your sheeting is down practically to solid, so that if she is scouring underneath, you prevent that scouring, and keep following it down along the dam. You have to be pretty sure before you send the diver down. You cannot send a man down into a dangerous position without taking some care.

Q.—Supposing the diver locates the leakage, what is the usual method of stopping it?

A.—He can plug it, sometimes with a bag of cement. There are quite a few ways of plugging it. If you are on solid rock, the most practical way is to plug it with cement. He takes down the dry cement, and forces it in, and it will set itself.

JOHN BOYD (for Defendant) Examination in chief.

Q.—Have you had any experience with excavation work in this country?

A.—Yes, I have been in charge of excavation. I was general foreman, and excavation comes under that.

Q.—In dam construction, and the digging of foundations, is it or is it not customary to have more than two classes of excavation specified?

Mr. Forsyth:—I submit there is nothing in the Defence which makes such a question as this proper to this witness. The witness never wrote a contract.

Witness:—Pardon me, I did.

Mr. Forsyth:—Of course, if he has written contracts, I withdraw my objection.

Witness:—I picked you up wrong, sir. I did not write contracts.

His Lordship:—I think the evidence may be allowed under reserve of the objection.

Mr. St. Laurent:—It is secondary evidence of what is in written contracts.

Mr. Geoffrion:—We may not be able to prove there are many by proving there are some, but we cannot prove there are none by proving every contract that has been made.

Mr. St. Laurent:—We have considered the point, and we were afraid it was beyond the scope the Court would allow us to investigate. If my learned friends go into it, we will have to endeavor to make rebuttal evidence on it, because the practice is not uniform. I have seen a great many contracts which state there will be only two classes of classification ; rock will be so and so, and everything else will be earth.

His Lordship:—As I understand it, the two classifications are, something that can be excavated by free shovelling is earth, and everything else is rock.

Mr. St. Laurent:—We have no serious objection to the evidence being adduced, but I am afraid it will involve a very considerable time in rebuttal.

Mr. Geoffrion:—We are so impressed by the objection and the threat of my learned friend that we will withdraw the question.

Mr. St. Laurent:—If we have to go into it, it will take a long time, and I do not think it will give any new information to the Court.

JOHN BOYD (for Defendant) Examination in chief.

By Mr. Aylen, continuing:—

Q.—You have handled excavation work both in earth and in rock?

A.—Yes.

Q.—What sort of equipment do you usually provide in a contract where there would be perhaps 25,000 or 30,000 cubic yards of earth excavation ?

A.—The thing to use is a shovel. Of course, there are other ways in which you can do excavation which may be cheaper than a shovel : for one thing, you can use a hydraulic ram to wash your stuff down, if the stuff is all right to wash, and you can do it more cheaply than with a shovel. At the same time, the shovel is the logical thing to put into a 30,000 yard excavation.

Q.—Have you ever used an orange-peel bucket?

A.—Yes, in what we would call tough digging — that is, not hard digging, but what we would call tough digging. I would consider the orange-peel is designed for tough digging — large boulders, in a gravel bottom, where it is not hard but it is awkward to take it out in any other way except by the orange-peel bucket. The orange-peel opens wide, and goes down and grabs the bigger stones much easier than any other type of bucket.

Q.—In your opinion would an orange-peel be able to excavate earth properly in winter time, when it is frozen?

A.—No, I would not say so.

Q.—Would a steam-shovel be satisfactory in such an earth excavation in the winter when the ground is frozen?

A.—Yes, it would, to a certain extent. If it was frozen too hard on top you could shoot it off. Then again, the steam-shovel is working into a face all the time. I say a steam-shovel, but steam-shovels are rather out of date now. They are using more gasoline and power shovels. The shovel is working into a face all the time. She is scratching on the face. It is only the top that freezes, and if the top is frozen four feet or so, we could easily shoot it. It is just the top that would have to be shot.

Q.—Have you recently been to the location of the works at Cedar Rapids?

A.—Yes.

Q.—When were you there?

A.—I was up there the latter part of last week.

Q.—Did you go to the place where the by-pass had been excavated?

A.—Yes.

JOHN BOYD (for Defendant) Examination in chief.

Q.—Were you able to see that part of the by-pass which is now below the dam?

A.—Yes: from below the dam to the end of the cut.

Q.—There was no water in it?

A.—There was no water.

Q.—What were you able to see there?

A.—The snow was pretty well off the bank, and we shovelled snow at three different points on the bank.

Q.—You uncovered the ground at three different points?

A.—Yes.

Q.—Where were those points, with relation to the top of the bank itself?

A.—On the top of the bank.

Q.—On the bank?

A.—We were down at the bottom of the cut, right alongside the water.

Q.—How far would that be from the top of the bank?

A.—I did not measure it, but I should say an average of may be about 14 feet. It is the river where we were.

Q.—Did you dig there?

A.—Not at that point, no. We came up because the stuff was frozen down in there, and some stuff had caved in from the bank, and we came up to get easier digging. We probably came up about between 9 and 10 feet from the surface.

Q.—Did you dig into the side of the cut?

A.—Yes.

Q.—At how many places?

A.—Three places.

Q.—About what quantity of earth, or whatever it was, did you dig out?

A.—We just bored a hole, practically, with a round hose shovel. I guess we went in may be a foot or eighteen inches — eighteen inches at the very most.

Q.—What sort of material did you find?

A.—The material picked all right. It was not an awfully hard job to get it in.

I took a sample of the material with me, to see it when it was dried out. From what I could see of the material it was deposited in layers of about half an inch or one inch stuff, with a covering of silt. Every freshet had deposited it for quite a long number of years, and very many years. Besides that there were certain pockets of stones that showed through — just stones you might call them.

JOHN BOYD (for Defendant) Examination in chief.

I took this sample, as I wanted to see it dried out.

We were travelling in a snowmobile that day, and it was getting pretty late, and we had to make twenty miles to get to the hotel. I threw the sample in the bottom of the car, and we drove the twenty miles to the hotel.

When I looked at the sample I found there had been a certain amount of heat in the car with the travelling she had done, and also while we were out shovelling our way out we had left some snow in the car.

When I looked at the sample it was down to about half the size I had when I started, and it was all spread over the bottom of the car, and it was this sand and silt that was mixed in there.

I did not bother taking the sample out of the car, as we were going to Buckingham the following morning. When I got to Buckingham the following morning, unfortunately there was no sample left: it was all over the bottom of the car.

Q.—What was the nature of it?

A.—It looked to me to be more a sand than anything else.

When it was in the solid it looked as if it had been a sand deposited there under pressure, and kind of solidified. There was a mixture besides the sand, of course.

And it being 12.30 o'clock, the further testimony of the witness is continued to 2.30 o'clock in the afternoon.

And further for the present deponent saith not.

And at 2.30 P. M. personally came and reappeared John Boyd, and his examination in chief was continued by Mr. Aylen, K. C. of Counsel for Defendant as follows:

By Mr. Aylen:—

Q.—Have you had experience with structural steel work, the type that is met with in the construction of dams?

Witness:—What do you mean?

Counsel:—You stated in your report that you produced,

that you have been general superintendent of construction on several dams, at Saguenay and other places?

A.—Well, not general superintendent ; field superintendent and general foreman.

Q.—On those jobs, was there any structural steel work done in the power house, or in the gates of the dam?

A.—In the gates, of the dam, the spillway.

Q.—Are you able to express any opinion as to what degree the placing of structural steel work in winter would be more expensive than in summer, if at all?

A.—It should not be much more expensive . I do not see how it should. There is no reason why it should be more expensive. There might be a little ice get on the stuff. The rivetters work a whole lot quicker in the winter time than they do in the summer time. You gain that in labor.

Q.—What about the concrete work? I understand it is more expensive to do the concrete work in winter is that correct?

A.—Sometimes it is. It depends on what class of concrete you are doing. Bulk concrete does not run so expensive.

Q.—What has been classified in this contract, is class 1 concrete. I understand it is the bulk concrete. Are you able to express any opinion as to what the extra cost of placing that type of concrete would be in winter, rather than against summer work?

A.—There is no extra cost in placing it. It is the heating of the aggregates where the cost comes in, and protecting it at night against the cold.

Q.—Have you actually been connected with any jobs where concreting was done in winter?

A.—Yes.

Q.—And have you been able to form any opinion as to how much extra it would cost per cubic yard to do that work in winter?

A.—Any records I have about it is, bulk concrete would probably cost say, five per cent, and the other class of concrete would cost ten to fifteen per cent, depending on what method you take. Of course, the cost of protecting concrete depends on what method you are asked to employ. To protect concrete you can go to a lot of expense.

Q.—I am speaking of what is necessary in order to do good concreting in winter?

A.—I would say at the very most fifteen per cent. on a certain class, and from five to ten per cent say at the very most on bulk concrete.

JOHN BOYD (for Defendant) Cross-examination.

Cross-examined by Mr. Forsyth, K.C., of counsel for Plaintiff.—

Q.—Mr. Boyd, your statement of experience, D-36 starts off, High School and Technical School education in Dundee, Scotland. What time did you complete that course of study, at what age?

A.—Seventeen.

Q.—Were you taking the High School and the Technical School courses concurrently?

A.—Yes, concurrently.

Q.—How many hours a day were devoted to technical education and how many to high school work?

A.—About half and half, I guess..

Q.—Don't guess about it. You were there.

A.—Well, half and half. Sometimes it was changed. Sometimes you would have two hours; other days probably four. I guess it would average up to half and half.

Q.—What would you be doing?

A.—You are going pretty far back now. It was a general construction course.

Q.—You are a young man. You are only forty-four years of age. What sort of technical education or general construction were you getting at the age of seventeen?

A.—We would say on general construction.

Q.—What do you mean by general construction? Cofferdams?

A.—No. I would say principally and architectural course. That is what I did.

Q.—As an architectural course, and what else?

A.—An architectural course took in quite a lot of stuff.

Q.—What would the architectural course take in?

A.—Anything from foundation excavation to building construction?

Q.—Don't ask me questions. You took it. Tell me what it is?

A.—That is what it is.

Q.—What?

A.—What is an architectural course anyhow?

Q.—I am asking you.

A.—It is general building construction, is it?

Q.—Well, is it?

A.—Yes.

JOHN BOYD (for Defendant) Cross-examination.

Q.—Did you get any practical instruction in the use of tools?

A.—Certainly. I served my time to be a carpenter; I did not serve my time to be a carpenter exactly, but I served on carpentry work.

Q.—Don't let us go to fast. Where did you serve your time as a carpenter, if at all?

A.—In the Old Country.

Q.—What age were you when you were serving your time to be a carpenter?

A.—I started in 1917, when I finished that course, but I had been working between times such as on nights and Saturdays on that particular work.

Q.—Were you working nights at carpenter work?

A.—As my father happened to be a building contractor in the Old Country.

Q.—Did you work nights at carpenter work serving your time to be a carpenter?

A.—Not altogether.

Q.—Did you do any work at nights?

A.—Certainly. You don't serve your time in two days.

Q.—Don't tell me what I do. Tell me what you did.

A.—I am saying, you can put in time for two or three hours a day before you actually go on to finish your course, can't you?

Q.—What course are you talking about?

A.—Well, the carpenter course. That is embodied in that technical course, isn't it?

Q.—Well, is it? You took the technical course.

A.—Certainly. I am telling you I did carpentry work after hours, from the time I was taking that course.

Q.—I am going to suggest to you that that course was a course in manual training instruction in the use of tools as a carpenter?

A.—I beg your pardon. I was educated to take off quantities— not to design buildings; in other words to take off quantities. I don't call that manual labor.

Q.—And you were then graduated from the High School Technical Course at the age of seventeen, is that right?

A.—Yes.

Q.—How long after that did you serve as a carpenter learning your trade as a carpenter in the Old Country?

A.—I served about three years.

JOHN BOYD (for Defendant) Cross-examination.

Q.—You served about three years in the Old Country after that?

A.—Yes.

Q.—And you are now forty-four years of age?

A.—That is right.

Q.—Then, what did you do?

A.—I came out to the States in 1908.

Q.—What part of the States?

A.—The New England States.

Q.—What State were you in?

A.—Boston. I was in New York for a while and moved up to Boston.

Q.—Were you working there as a carpenter?

A.—Well, on general construction.

Q.—Were you working as a carpenter or not?

A.—You worked wherever you could get it, that is what I was doing. I worked part of the time as a carpenter and part of the time on the rougher type of construction.

Q.—What do you mean by rougher construction?

A.—Carpenter's work, rougher construction.

Q.—You were working on rough or finished carpentering?

A.—Yes.

Q.—During the period.from 1908 to 1910?

A.—Yes.

Q.—And in the city of New York and in the United States chiefly?

A.—Yes.

Q.—You are forty-four now. That would make you in 1910, that is, twenty-three years ago, you would be twenty-one years of age, would you not?

A.—Approximately, I guess.

Q.—Twenty-one or twenty-two?

A.—Twenty or twenty-one make it.

Q.—Well, twenty or twenty-one. Have it your own way. Then you went to work on the Trent Valley Canal?

A.—Yes.

Q.—Working on cofferdam work there?

A.—Yes.

Q.—What part of the work were you doing there?

A.—Just ordinary cofferdam work. I was not in charge of it.

Q.—What is ordinary cofferdam work when you are not in charge of it ? Were you doing carpentry work on the cribs?

JOHN BOYD (for Defendant) Cross-examination.

A.—You don't use much carpentry work on the cribs. You use a hammer and saw and axe, and thing like that.

Q.—You would call that carpentry work, I suppose?

A.—You would hardly call it carpentry work.

Q.—What would you call it?

A.—Crib work.

Q.—Was that what you were doing, putting the cribs together on that job?

A.—Yes.

Q.—In 1911 to 1912, bridge work, including pier foundations, sinking of cribs in forty feet of water, dock and elevator work, on Lake Champlain and Montreal, and Port Kent, working as a foreman there?

A.—On some of it.

Q.—On what parts of it were you working as a foreman in Montreal?

A.—I was not working as a foreman in Montreal. I was working as a foreman on Lake Champlain as straw boss, sinking deep cribs on Lake Champlain.

Q.—What were you working at in Montreal?

A.—Carpenter foreman on the Elevator.

Q.—Then, in 1912-1913 you were doing bridge work on the C. P. R. double track. Where was that?

A.—A little north of Sudbury, between there and Fort William, that is, Lake Superior division. It covered the whole thing pretty well.

Q.—You were there one year?

A.—I was there three years.

Q.—And you were in charge of building bridges?

A.—Yes.

Q.—Only for the C. P. R.?

A.—Not for the C. P. R., for the contractor.

Q.—Who was the contractor?

A.—The Dominion Construction Company had the contract. Mr. Hoffman was general superintendent and the bridges were let out to a sub-contractor.

Q.—Who was the sub-contractor?

A.—Kauffman and Fletcher, or Fletcher and Co.

Q.—And you were working for them?

A.—That is right.

Q.—Then, when you came back from the war you were employed by the Soldiers Civil Re-Establishment Department?

A.—Yes.

JOHN BOYD (for Defendant) Cross-examination.

Q.—Then, in 1920 to 1920 more bridge work for the C. P. R., employed by the C. P. R.?

A.—No, employed by the Dominion Construction company again.

Q.—And were they the main contractors, or sub-contractors?

A.—They were the main Contractors.

Q.—You were working for them?

A.—The Dominion construction Company and Ramsay, I think it was.

Q.—On the Canadian National, were you working for the Dominion Construction company?

A.—No. I was working again practically for the C.N.R. but being paid by the contractor on that particular job. They fell down on it, and Mr. Hazen asked me to go out and take charge of it. I wanted to have my money guaranteed before I went out, and they guaranteed my money and I was paid.

Q.—That is Mr. Hazen of the C.P.R.?

A.—Mr. Hazen and Mr. Dizney.

Q.—Then you were down at the Duke-Price work. Who were they working for there?

A.—The general manager or the general superintendent.

Q.—What companies employed you there?

A.—The Duke-Price Power Company and the Aluminum Company of Canada.

Q.—Did you superintend the cofferdam construction at that place?

A.—The cofferdam construction there was carried over a wide are. I was in charge of certain parts of that work. I did not do all the cofferdam work.

Q.—I would suggest to you that anybody would gather from that piece of paper that you had not done it all, would they?

A.—I did not prepare this piece of paper.

Q.—Are you suggesting that that piece of paper is incorrect?

A.—No. but I would say right here now, how could it be possible when I said I was general foreman and field superintendent. I did not claim I was general superintendent on the job.

Q.—Are you general foreman and field superintendent, is that right?

A.—That is right. Those are the two positions I held.

Q.—Is this list perfectly accurate?

A.—Yes, as general foreman and field superintendent.

JOHN BOYD (for Defendant) Cross-examination.

Q.—What is the difference between general foreman and field superintendent?

A.—Why, as soon as I leave the main job to go and take charge of another job, probably twenty-five miles away, all in connection with the same development I go out absolutely on my own account. If I go back to the main job and work there for a certain time I act as general foreman there, but as soon as I am sent out again to take charge of certain work, then, I am superintendent.

Q.—Suppose you applied that to the Cedars and High Falls Development, if you had been at High Falls, you would be a general foreman there?

A.—No, I would not. Oh, no.

Q.—I want to find out. You would not be?

A.—If I was in charge of the work I considered myself superintendent of the work, field superintendent.

Q.—But if there was another person there superintending the work at High Falls, then, you would be general foreman?

A.—If I was second in command to him, then I would be general foreman and assistant superintendent.

Q.—And then, if you went on up to Cedars, and your chief stayed down at High Falls, you would become field superintendent at Cedars?

A.—Certainly, if I had complete charge or control of the work.

Q.—Did you have anything to do with the cofferdam construction at Ile Maline?

A.—In certain sections.

Q.—I am asking you a question, and I want an answer. Did you have anything to do with the cofferdam construction at Ile Maline?

A.—I told you before I did not have charge of the whole of it, but I had certain sections. I mentioned one part.

Q.—What parts did you have charge of?

A.—Well, I went up to the Little Discharge. There are two discharges from Lake St. John. The big development was put on the main Discharge and the other Discharge was acting as retaining dams or spillways and I dammed the Little Discharge at three different places.

Q.—Cofferdams?

A.—You had to use cofferdams before you put the concrete.

Q.—Was there any cofferdam difficulty down there?

A.—No, not much.

JOHN BOYD (for Defendant) Cross-examination.

Q.—At the Duke-Price Development there?

A.—Are you referring to the Little Discharge or the Duke-Price?

Q.—I am referring first to the Little Discharge?

A.—There was not much. There was a head of water of probably about eight feet, but we had not much difficulty.

Q.—Is that the only place you had anything to do with the cofferdam there?

A.—At Ile Maline, yes, practically the only place I had anything to do with the cofferdam.

Q.—And there was not very much difficulty there?

A.—No.

Q.—Who had charge of the cofferdamming at the other points?

A.—Well, I don't know. I thing they were changed quite considerably. If a man did not fill the bill he was not kept. I just could not tell you who the deuce it was on the finish up of that thing.

Q.—There were several people who were not kept?

A.—Absolutely. You did not keep them around if they did not fill the bill.

Q.—I presume you have had experience in every department of the construction of hydro-electric plants, dams and storage facilities etc?

A.—I have had experience on every part of it, practically on every part pertaining to construction.

Q.—And you are satisfied you are thoroughly familiar with that work?

A.—Well, I will tell you, I can answer that question by saying that people paid me good money for about seven years by gosh, to keep it up that way anyhow.

Q.—Have they been paying you any lately for it?

A.—No. I have been trying my best to take that up my own. It is hard times these days in the construction game.

Q.—I want to ask you, apart from what judgment other people may have formed of your capacity, or what you think about it yourself, that is, whether you are satisfied that you are thoroughly familiar with the type of work that we have been discussing?

A.—Well, I have been able to earn a pretty good living with it, and got paid pretty good salaries all my life, and have been comfortably off. I have not earned much more outside of that, except for a time playing the market, losing with them, and making a few dollars. That is a recreation.

JOHN BOYD (for Defendant) Cross-examination.

Q.—Well, after all, the fact that somebody pays you money for a thing maybe their estimate of your worth but I want to get your own estimate of your worth and want to know whether you are satisfied that you were thoroughly familiar with this type of work?

A.—Certainly. I could say like Uriah Heep, I am humble. I don't want to blow my own horn too much about this. I guess I can hold my own to a certain extent.

Q.—Let us do a little horn blowing. Tell us this. You are satisfied that you are thoroughly familiar with this type of work?

A.—Wouldn't you be satisfied?

Q.—Don't ask me a question. Answer my questions?

A.—Yes, certainly.

Q.—You are certainly satisfied?

A.—Yes.

Q.—And you are thoroughly satisfied that you are able to give a sound opinion on anything that pertains to this type of work?

A.—Yes.

Q.—And apart from the cofferdam work that you did for the Duke-Price people at the Little Discharge, I suppose you had some cofferdamming to do in connection with this bridge work that you did?

A.—Do you want the history of my Duke-Price....

Q.—Will you answer my question, and don't ask me what I want. I just ask you if you had some cofferdam experience on the bridge work?

A.—There was not much cofferdam experience on the bridge work.

Q.—Were you doing bridge work for the Duke-Price people?

A.—I don't know what you are referring to. I am answering you the question about the Duke-Price people. If you switch to bridge work, I will talk about my experience on the C.P.R.

Q.—Your cofferdamming experience for the Duke-Price people was limited to this Little Discharge, is that right?

A.—Yes.

Q.—So, we eliminate the Duke-Price from the cofferdam. When you were doing bridge work for the C.N.R. for which the contractor was paying you, and when you were doing bridge work for the contractors on the C.P.R., I presume you had some cofferdamming to do there?

A.—I certainly did.

JOHN BOYD (for Defendant) Cross-examination.

Q.—Did you have to dam the whole stream on any occasion when you were doing this bridge work?

A.—No, but I had to put in cribs, to be pumped dry, to float your crib into position. It had to be very accurately placed and the piers had to go inside that crib. You use sheet piling inside and pump it dry.

Q.—And the water just went past?

A.—Yes.

Q.—You did not have to handle the whole stream?

A.—No. You handled what was in the crib.

Q.—What you would handle, would be the head of water against the face of your crib?

A.—Yes.

Q.—And you would not say that the work that you did on the Trent Valley Canal was a cofferdamming work? Of course, you would gain some experience from seeing other people doing it, but you had no part in the placing of the crib?

A.—The actual experience I was getting up there was working, and doing what I was told. I was getting the other men's ideas.

Q.—On the Little Discharge on the Duke-Price Development you were working in about eight feet of water?

A.—I think, if I can remember, it ran to about eight feet.

By Mr. Geoffrion:—

Q.—Did you say water, or head?

A.—I would say that was the greatest part of it. Of course, the shape of the river varies. It comes around if I remember, — eight feet was about the head.

By Mr. Forsyth:

Q.—Now, being as you admit, thoroughly experienced in this matter, would you tell me what the purpose of the cribs is in cofferdam work. What is there function?

A.—Well, purely a frame to hold in the filling of sufficient quantity in weight, to hold back the water.

Q.—Would it be anywhere near correct to say that the purpose of the cribs is to have an anchor for the sheeting.

A.—Well, that is the very same thing.

Q.—Provided, I suppose, that you get cribs down sufficiently strongly — if that is a good expression, to keep the sheeting from carrying away, the cribs have fulfilled their function?

JOHN BOYD (for Defendant) Cross-examination.

A.—Well, certainly. The sheeting is nailed on the face of the crib and the sheeting cannot get away unless the crib goes away.

Q.—So that when you get a crib in there that sticks and holds the sheeting, you have a crib that you are satisfied has fulfilled its function anyway?

A.—No, each crib has to be in line.

Q.—They have to be in line?

A.—Yes, certainly.

Q.—If the sheeting is in line, I suppose it is all right, is it?

A.—Well, it simplifies the whole matter, doesn't it?

Q.—I am just asking you.

A.—It costs you less money when you are sinking cribs. You sink them to the line. You have to sink them to the line because they are made to fit the bottom, therefore, we take a straight line. If we start a crib, we go from here to that wall in a straight line. These bottoms are made to fit — the bottom to the cribs are made to fit the irregularities that are in that. Therefore, she is in a straight line when she is finished.

Q.—Mr. Boyd, will you just go back to the question again, and tell me this: if you have cribs which are placed in position and which enable you to sheet, so that the sheeting does not move, have not the cribs fulfilled their function?

A.—They have not, if they are not in a position where they were able to go.

Q.—Well, now, just tell me what you would do. I don't want you to tell us at such great length, but, do I understand from you that you would take soundings not less than two feet apart right across the river bed, that you would build the bottoms of your cribs to conform to the contours as they were established by those soundings, and you would float the cribs into position?

A.—Yes.

Q.—And then, you would lower them and sink them and they would be anchored there?

A.—Yes.

Q.—If you got your sheeting in front of them, sheeted the face of them with your sheeting, and the cribs kept the sheeting from going downstream, then, the cribs would be doing what you put them there for?

A.—They would be doing what they were put there for if they were in the right place, the place where they were able to go.

JOHN BOYD (for Defendant) Cross-examination.

Q.—But if they kept the sheeting from going down stream, they would be doing what they were put there for?

A.—Certainly not, because if your dam were irregular in there and you got three or four feet downstream in your crib from where she would be, she was liable to blow out on you.

Q.—I do not suggest she would blow out. I suggest she was there?

A.—I am only suggesting what would happen to your crib.

Q.—I say if the crib kept the sheeting from going downstream and was holding the sheeting, it is doing there what you put it there to do?

A.—If the crib is in the right place.

Q.—It would hold the sheeting if it was in the right place or not?

A.—No sir. The cribs are supposed to be in position.

Q.—I mean apart from the humiliation of not being able to get them in the right place, if they are holding the sheeting, and the sheeting is holding back the water, the cribs are doing what you put them for?

A.—If it is holding back the water?

Q.—Yes, is that right?

A.—If it is. You are may be going to an awful lot of expenses.

Q.—Don't speculate about it. Let us say the crib is in position and the sheeting is down and holding back the water?

A.—I say if the sheeting is in position, that is what she is designed for, and holding back the water, I say if the cribs are in place.

Q.—I will tell you something. If you won't listen to my question it will be your fault if you do not understand me. Now, just listen to this question, and see if you cannot answer, and I would like for once to hear you answer that question, yes or no. If the cribs are placed, and the sheeting is on them, and the cribs are holding the sheeting, and the sheeting is holding back the water, have you got a good cofferdam or not?

A.—You are putting that question absolutely wrong, because you are leaving out a certain word in that question.

Q.—Let me be wrong once in a while?

A.—I am saying you are wrong, you are leaving out — you say position, and I say, right position. Now, why leave out the word, "right". If the crib is down thirty feet from where it was, it is not in position. You can sheet it up ; she will not hold back a certain amount of water.

JOHN BOYD (for Defendant) Cross-examination.

Q.—What do we build these cofferdams for?

A.—To stop water.

Q.—And if you have the cribs down there, and you have got them sheeted, and the water is held back, have you done the thing you started out to do?

A.—No, you have not. How about this for an explanation ? If I threw a boulder measuring say, twenty yards into the stream, that would perceptibly — not perceptibly, but it would slightly raise that water. It would be an obstruction into the stream. What is a crib but an obstruction to a stream, to throw back the water. I say if the crib is not in the right position, if it is not one solid crib from end to end you are putting in there, you are putting these in a series of sections.

Q.—You are speaking about art. I am talking of the material aspect of it. You are looking at the artistic side?

A.—I am not looking at the artistic side. If anything is built to fit a particular hole, it has to go in that particular hole.

Q.—Let us go back again to fundamental principles. I have always understood that what those cofferdams were constructed for was, for the purpose of keeping the water away from a certain area?

A.—That is correct.

Q.—Keeping that in mind, if you have cribs placed, and you have them sheeted, and they keep the water out of the area in which you are working, is your cofferdam a satisfactory cofferdam?

A.—It is, if it is placed in the right position. You have left out the word, "right" again.

Q.—Well now, what I am saying is, if you are keeping the water out of the area in which you are working, is that not all that any cofferdam can do for you?

A.—Well, to a certain extent may be it is.

Q.—I think it is to quite a considerable extent. Now Mr. Boyd, I think that possibly you would now be prepared to agree with me, that if your cribs support your sheeting, and the sheeting keeps the water out of the area in which you wish to work, that you have accomplished the thing you set out to do when you built the cofferdam?

A.—Well, if I am in the right position where I built the cofferdam, otherwise you are going to have trouble with the thing. Do you mean to keep all the water out or just some of it?

Q.—I had the idea when you said keep out the water, I

certainly had the idea conveyed to me that it was keeping out enough so that you could do your work satisfactorily?

A.—If the cofferdams are not put in the right position, you are going probably to have leaks in your dam.

Q.—Then, we will put it this way. I will just ask you this once more; if you have cribs that support the sheeting, that keep the water out of the area in which you wish to work, have you got a satisfactory cofferdam?

A.—Well now, that depends. It depends on how your sheeting is fitted to the bottom.

By the Court:—

Q.—What more do you want to do but to keep the water out?

A.—The cofferdam is designed to keep the water out.

By the Court:—

Q.—If you keep the water out, what more do you want to do? As long as it keeps the water out, that is all you want?

A.—The cribs should be in position.

By the Court:—

Q.—To keep the water out, what more do you want to do!

A.—It is supposed to keep the water out.

By the Court:—

Q.—What more do you want to do?

A.—You don't want anything more than to keep the water out.

By Mr. Forsyth:—

Q.—I think so far we are agreed, and I suppose that although it might be an affront to an artistic soul, but nevertheless, if you had a cofferdam that did not conform to every rule and portion of the bottom, if you had cribs that did not conform to that — I used the word cofferdam wrongly there, but if the sheeting kept the water out it would be all right?

A.—It would be all right if these cribs fitted the bottom.

Q.—Mr. Ferguson seemed to think that in the alignment of the faces of the cribs as shown on exhibit P-37, there being no

obstacle in front of the faces of the cribs, that you can sheet the face of those cribs with the alignment you have there.

A.—You could.

Q.—And he seemed to think that the fact that there was a space off two feet or less between the cribs was not really of very serious importance?

A.—Well, he probably filled that in. Your sheeting has to be solid.

Q.—But of course when you get into a position where you have to build false work out, and going a distance, varying from five to fifteen feet from the face of your cribs, then, the question of those spaces between the cribs is not of much importance, is it?

A.—No. If those cribs are just anchor cribs that are not going to be sheeted on the face, I do not see that it is.

Q.—Obviously from that design they were not sheeted on the face, were they?

A.—No, it does not look like it.

Q.—I understood you to say this morning (and I do not think there is any real difference of opinion about it) that you would use a diver in the places where you thought it was safe to send him down?

A.—Yes.

Q.—And you would not use him where you thought it was unsafe?

A.—No.

Q.—And you suggested that one way in which it might be made safe for a diver, although there was a swift current, was to sheet with some light form of sheeting, perhaps a more or less temporary sheeting just on the face of the crib?

A.—Yes.

Q.—That would be a useful suggestion where there was no obstacle to putting this temporary sheeting in the face of the crib, would it?

A.—Just what do you mean as an obstacle — stones or boulders or rocks, or something like that?

Q.—Well, I thought the word "obstacle" was a good word, but suppose we had a tangled mass of logs in front of our crib so that we could not sheet down the face of it, then your suggestion would not be useful, would it?

A.—No. Then, a practical man would try to take these logs out.

Q.—He would try to?

A.—He would do it, or try to.

JOHN BOYD (for Defendant) Cross-examination.

Q.—And failing taking them out, he would have to adopt some other expedient?

A.—Well, but were these logs in there before or after the crib was built? They could not be in before the cribs were built, because you could not stick them down in place, so they must have come in after.

Q.—If they are there, and they constitute an obstacle so that you cannot put this temporary sheeting down the face of the cribs, then you have to adopt some other expedient, have you not?

A.—Yes.

Q.—And one of the expedients that would suggest itself to a man of the vast experience that you have, is to build out false work from the cribs, is it not ?

A.—Before I would built false work, I would make an awful attempt to take these logs out.

Q.—I don't doubt you would. I suppose even the mightiest of us fail at times, and if you failed, I suppose you would do some false work, wouldn't you ? That would suggest itself as being an expedient?

A.—That is quite an item to build false work in front of a crib in water, in the swift water in this river, from what I saw of it ; I should imagine it was quite an item to build false work out that way.

Q.—It would be quite an item, but I suppose it could be done?

A.—Nothing is impossible.

Q.—Well, it was done there, was it not?

A.—Well, presumably.

Q.—You don't know?

A.—No, I did not see it.

Q.—At any rate, that is, I say, an expedient that would suggest itself to a man of your experience?

A.—I would think a long time about it before I would do that. I imagine I would concentrate on the removal of these logs before ever I put on anything like that.

Q.—Let us assume that somebody else had the same bright idea that you would have, and did concentrate in the removal of logs, and found is was impossible thing to do, or an impracticable thing to do; we will put it that way, because you have told me nothing is impossible.

A.—It was not a practicable thing to do, depending how he went about it, and what equipment he had.

JOHN BOYD (for Defendant) Cross-examination.

Q.—And I suppose, perhaps found building false work would be more useful and possibly less expensive under certain circumstances than to get the equipment here. That would depend on the problem he was confronted with.

A.—It would depend how the logs were jammed there. Were they locked or did they come down before the crib was filled.

Q.—Let us assume there was somebody up there who knew something about what he was doing. Would you, once you had come to the conclusion that it was not practicable to get equipment that would remove them would you say that it was a bad piece of construction work to build that false work out and sheet it?

A.—It depends on just how costly an item it is going to be. I never saw this river, and therefore I cannot tell you just exactly how costly it would be. Conditions would govern that.

Q.—So the person who had to decide that, must decide it according to the condition with which he was faced at the time?

A.—I would say he would, but was that position correct?

Q.—That is a question, but you don't pretend to say it was not, not having seen it?

A.—I don't pretend to say it was incorrect, not having seen the condition.

Q.—Will you say it was correct. You are neutral about that?

A.—Neutral on this question. As I say, I would have concentrated on the logs.

Q.—But I suppose, if the false work was built out there, and if it was sheeted, and if the false work and the sheeting and the cribs did not let water through, then it was accomplishing the purpose for which they set out?

A.—Yes, I have no doubt it is, but I could dam a river by a straight line, by taking the shortest direct point, and could go away up back a mile and keep on damming. I do not see that that is the shortest point to do it.

Q.—You can do it, I have no doubt, in nine or ten different ways?

A.—I am glad you have a good opinion of me anyhow.

Q.—Well, you admit that.

A.—Well, we have dammed rivers besides used timber cribs to dam them, but that has nothing to do with this thing.

Q.—You have dammed them?

A.—I have not dammed them. I have seen it done. When I say we have dammed, I do not say I have dammed.

JOHN BOYD (for Defendant) Cross-examination.

Q.—You are just associating yourself with the larger group?

A.—Yes.

Q.—And after all, I suppose it comes down to this, that if a man built a cofferdam that keeps the water out, he has done the thing he wants to accomplish?

A.—There is a way of building the cofferdam to keep the water out, — there is a way of building the crib to keep the water out and another way to keep the water out. You can build a cofferdam and start it wrong and have probably six months to built your cofferdam ; you can do the same thing perhaps in six weeks. There is one right way and one wrong way to build the cofferdam.

Q.—There is this much we will agree on, that you proceed with the question of sheeting in an entirely different way when you are operating on ledge rock as compared with when you are over some pervious material?

A.—Well, there is no driving sheeting when you are on ledge rock. You just fit them to the bottom.

Q.—You just fit them to the bottom and toe fill?

A.—No, not toe fill. We plug the hole. You do not toe fill until you find out how your dam is leaking.

Q.—You would not suggest toe fill?

A.—No. She would just come right through it.

Q.—But any man who has built on ledge rock, and going over every two feet of soundings first, and puts a table down on his plank, is not going to have a big hole?

A.—Sometimes she will blow, when there is soft rock. It might shaled off. It is raising your head of water after you cofferdam is in there.

Q.—At any rate, you would not toe fill to start it?

A.—No, I would not toe fill until I found out how the dam was acting, the reason of that being, if you toe fill there, you have absolutely no chance to go down and investigate where your leaks are, and how your leaks are, and do any repairing on the thing.

Q.—Will you go this far with me and say if, owing to condition that existed at that particular site it was necessary to build that false work out and sheet it there, that the type of sheeting I have heard was used, namely, the Wakefield type, was the proper type to use, and not the light sheeting?

A.—I understand that dam leaked badly.

Q.—Never mind whether it leaked badly. Answer that

question, if you were sheeting this false work, whether you would use the Wakefield type of sheeting rather than the light sheeting?

A.—Well, I would not probably use the Wakefield type. I would investigate what my bottom was. If this bottom was composed of an over-burden of boulders and very hard material, that you could not get your Wakefield through, I would swing back over to sheet steel piling.

Q.—Would you send a diver down to find out what the bottom was composed of?

A.—No, you can do it by sounding quite easily.

Q.—Which is, in your opinion, a very accurate way of determining whether you are on rock?

A.—Well, a man who has been accustomed to a sounding rod can pretty well tell whether it is rock or earth, or loose material.

Q.—Or the difference between ledge and boulders?

A.—Oh yes.

Q.—Easily?

A.—Well, quite easily. I would say a man with experience can tell that quite easily.

Q.—Are you an experienced man at soundings?

A.—Well, I have done quite a little of it.

Q.—Where did you do it?

A.—In any of these rivers, that were in there and on the work of the C.P.R.

Q.—You did it at the Little Discharge where you were working in eight feet?

A.—There was very little to be sounded there; certainly, we sounded the Little Discharge, but we can tell when we are on rock, and we can tell when we are practically on slate. Of course that may sound like a large statement to make. For instance, if you have an enormous size boulder it may kind of hold you up, but if you are on the ordinary earth, we will say material of a hard substance, you can tell when you are striking rock by the sound of the thing.

Q.—And if you go through a couple of feet of earth, I suppose you can tell?

A.—Well, if you are in any doubt at all, there are other methods you can use.

Q.—What are they?

A.—Put down a drill.

Q.—Is that what you speak of as core drilling?

A.—No, that is diamond drilling. You can use a diamond drill. A diamond drill brings up a core.

Q.—Have you made soundings in places where you had fifteen to twenty feet of swift water, yourself?

A.—Well, I have not done it myself, but I have supervised it or offered suggestions on it.

Q.—You have supervised it and offered suggestions on it, but you have never done it yourself?

A.—When the work come up there, if you have a crew of men under you who are down doing these soundings, you tell them what to do. You don't do it yourself.

Q.—You have never done it yourself?

A.—I have certainly sounded lots of rivers.

Q.—In fifteen or twenty feet of fast water?

A.—Well, varying waters, yes.

Q.—You have sounded lots of them yourself?

A.—May be not all cofferdams, but on power foundations you have the stone. You want to see what your stone is down there.

Q.—Where was this? On the C.P.R. work?

A.—You can get it on the C.P.R. and on the C.N.R.

Q.—Really Mr. Boyd, I don't want to criticize you. Perhaps you are answering the question, but if you will just keep this in mind what I am asking you about now is, what you yourself have actually done with a rod. Have you, yourself, actually taken the soundings with the rod in rivers where you had fifteen to twenty feet of fast water?

A.—Yes.

Q.—Where?

A.—When you say fast water, what speed of water?

Q.—Well, six to eight miles an hour?

A.—Well that is fairly fast, pretty fast water. No, I would not say I had taken soundings in a river travelling at that rate, but what we would consider fast water would probably be anything from half a mile to, going up to three miles an hour, or less than that.

Q.—It is a little bit different working in a current six or eight miles an hour?

A.—Well, we were working in forty feet of water and had to take soundings for our cofferdams and cribs.

Q.—You were not taking them with the rod?

A.—No, we used different methods entirely.

Q.—Have you ever taken soundings with a rod in a river fifteen to twenty feet deep, where the current was six miles an hour or over?

JOHN BOYD (for Defendant) Cross-examination.

A.—I could not just remember at the present time whether I have ever done that or not. I have taken lots of soundings as I say, but just to say I have taken soundings in that amount of water in a river, I would not commit myself either one way or the other.

Q.—You have been up on the Lievre River?

A.—Yes.

Q.—When?

A.—At the end of last week, five or six days ago.

Q.—Who was with you?

A.—An engineer called McCrimmon from the Maclaren Company. He took me up there.

Q.—Just you and Mr. McCrimmon?

A.—And the automobile driver.

Q.—The fellow who drove was not inspecting. He was just driving the car?

A.—He was just driving the car.

Q.—You went to some place on the bank of the by-pass channel there and took some snow off and did some digging?

A.—Yes.

Q.—Do you know whether that bank at the point where you dug into is the bank left when the construction work finished?

A.—I would not say so. I would say the water had scoured out a little bit.

Q.—So that the line where you made this excavation of yours would not be the line left when the work was finished?

A.—No, although I walked down the bottom of the slope. It was quite close to the water there, where it is at the present time. I could not say where the line was when it was finished.

Q.—Did you hear of the weathering of any exposed material?

A.—All material will weather to a certain extent.

Q.—And much disintegration under exposure to the weather?

A.—Well, different actions on it. It depends on the chemicals, I suppose, in the material.

Q.—And as it disintegrates lower down, the stuff will run down from the top?

A.—Mostly from the top. There is more exposure.

Q.—And rolls down?

A.—And rolls down over the top.

Q.—And your excavation went in twelve inches?

JOHN BOYD (for Defendant) Cross-examination.

A.—Well, probably a little more ; twelve at the minimum, I would say. We went in that cut twelve inches to hold it out. You can say we went in fifteen inches.

Q.—You would say it was a minimum of twelve and a maximum of fifteen inches?

A.—Fifteen to eighteen.

Q.—What would be the size of the sample you took ? What would it weight ?

A.—I could not just say. I did not pay much attention to the weight at all. The size was about six inches in diameter, the piece I took.

Q.—You took a piece six inches in diameter out of this bank?

A.—Yes.

Q.—How far below the dam were you where you took the sample ?

A.—I would say we were about ten feet below the bank, below the surface of the bank.

Q.—You misunderstood me. I am speaking of the downstream face of the dam. How far below?

A.—Well, the center of the downstream face of the dam and the extreme end of the cut.

Q.—That is half way down?

A.—Half way down from the spillway to the foot of the cut.

Q.—And on which side of the cut were you, the north or south side ?

A.—The north side. We came over that approach anyhow. It is the north side I guess we came on.

Q.—I show you a photograph which is the second photograph of exhibit P-92. The side that you were on was the right had side of this photograph as you are looking at it?

A.—That is right.

Q.—As I understand it, you went right down to the water's edge first?

A.—Yes. One minute. This looks to me to be slightly different from what I saw.

Q.—This was taken before you were there. That probably explains it.

A.—A lot of the stuff was washed out there ; the recollection I have is, this came down to the spillway.

Q.—Your recollection is, that when you visited it last week, the water coming through the spillway, shown at the ex-

treme right of this photograph, had a clear run with no obstruction ?

A.—That is right.

Q.—And the inference from that is to be, that the material shown in front of the water, proceeding through that spillway, had been washed away?

A.—That is right. This photograph might show it a little bit over to one side. Without looking at the back, this is the place we were in it, between this spillway and the other end of the cut.

Q.—And that photograph No. 3 of exhibit P-92 shows the surface of the ground at approximately the point....

A.—At approximately the point. Of course, we do not see the end of the cut, but it is approximately in there between the downstream face of the dam and the lower end of the cut.

Q.—And you first went to the water's edge?

A.—Yes.

Q.—And then, you went up the slope about ten feet?

A.—We walked down as far as we could get on the water's edge, and down to the dam, and looked at some of the original material that was shown ; some of the material was shown where it was caved in.

Q.—You started at the down stream face of the dam and walked down the north side of the cut at the water's edge?

A.—He walked down the lower end, and I walked up.

Q.—You went down to the lower end of the by-pass cut, and walked up to the downstream face of the dam?

A.—That is right.

Q.—Then, did you stop half way up, and take this sample out?

A.—No. We walked up there, and then we walked back again, just looking at the condition of the thing, and we left the pick and shovel that McCrimmon had taken down with him at the lower end, that is, when we walked back again. It was my intention to take a sample out of that end, and then at the lower end the cut was much shallower. At least, it looked to me to be quite a bit shallower. We walked back and shovelled a little bit down there; we did not take a sample; we followed down a good way, and then took a sample out and dug in the center of the cut and removed what we considered was the weathered material. This stuff, as I say, was in layers, and we dug that after we had removed a certain part of this material, we took a sample out there and went back up into the lower end, up to the spillway,

and we did start an attempt in there to dig, but did not go very far. The snow was pretty deep and we did not go very far.

Q.—It was an easier place where you took the sample, — an easier place to get at?

A.—Well, it was an easier place to get at. It was easier to stand in.

Q.—And the point at which you took a sample would be how far above the water's edge?

A.—I did not look at the water's edge. I could guage it a whole lot better by the surface.

Q.—How far down from the surface?

A.—Approximately between nine and ten feet I would say.

Q.—That is, you took your sample about nine to ten feet below the surface of the level of the ground?

A.—Yes.

Q.—And the sample, I think you told me, was about six inches?

A.—About six inches square. We will say roughly, six inches square.

Q.—It is your theory that men work faster in the winter time at steel work?

A.—I suppose all men do, when exposed to the weather, work a little bit faster in the winter time than they do in the summer time.

Q.—You think the efficiency of labour in the winter is greater than in the summer time?

A.—I do not say the efficiency, but you can get more out of the men in the winter than in the summer, the reason being the market is too flooded and you can get a little more work out of them. I am not talking about heavy driving. Men are keener to hold their jobs on construction work in the winter than they are in the summer.

Q.—Is that what you meant when you said they worked better in the winter than they did in the summer?

A.—Yes.

Q.—What do you mean by the expression, "efficiency of labour"?

A.—Well, efficiency — of course, I suppose everybody is efficient, even a common laborer is efficient if he can satisfy you by shovelling dirt, and the highest paid mechanic is efficient if he can hold his job.

Q.—I suggested to you that you thought that labour was more efficient in the winter time than in the summer, and you

said, no, not that, but you thought you would get more work out of them. I just wondered what your view was as to the meaning of the words efficiency of labourer?

A.—My experience is, you can get them to work, probably they will work slightly harder.

Q.—And they won't get more done?

A.—Well, it does not increase the percentage.

Q.—What I am getting at is this: do you mean a man works harder in the winter time because he is trying to keep warm, that he works harder in the winter time because he is trying to keep his job?

A.—A combination of both.

Q.—And do you think the extra effort that he puts on for the sake of warmth, and for the sake of his job, that he gets more done in the winter than in the summer?

A.—No, but he will achieve more in the winter than in the summer. He is probably equipped with heavier clothes. He cannot get around quite as quick, but he is on the hop.

Q.—I don't suppose a man wearing mittens is as efficient as one who is not wearing any.

A.—It is surprising how efficient they are sometimes.

Q.—As to this concrete, you think that under winter conditions, bulk concrete should be made at not more than fifteen per cent excess over the summer conditions?

A.—I said about between five and ten.

Q.—Would you put that up to between ten and fifteen?

A.—I would not put it up for bulk concrete. I would put it up as high as fifteen on narrow forms where protecting has to be.

Q.—What is it that makes it cost more?

A.—Heating the aggregates, covering and protecting your pours in the forms.

Q.—And keeping it warm?

A.—Yes.

Q.—Covering and protecting it?

A.—Yes.

Q.—I suppose that extra cost varies as you have said, depending upon what you are compelled to do?

A.—Yes.

Q.—That is, pouring the concrete for one engineer, you could do it at a certain percentage of increased cost, and pouring it for another one it may cost you very much more?

A.—Well, I will tell you. A contractor has a very good

idea what it takes to protect that. He is held responsible for it anyway.

Q.—We are getting to the end and before getting there, I do not want you to answer questions that I have not asked you. I want you to answer the questions I ask you?

A.—I want to explain. I cannot say yes or no.

Q.—Answer them first, and explain them after.

A.—Some engineers who do not know their work would probably let you get away with that stuff.

Q.—Those would be the fellows you would do it for five per cent for?

A.—Yes.

Q.—And the ones that knew their work would cost you ten ?

A.—Well, probably more.

Q.—Just what I thought, and I suppose it would cost a little bit more, that is to say, one factor in the variation in cost, would be the distance you were from your fuel supply?

A.—Well yes, if he was hauling it a very long way ; of course, that depends on what it cost to haul it in per ton. It all depends on the price of the coal.

Q.—And the price of the coal goes into the cost of the concrete?

A.—Yes.

Q.—And as a matter of fact, it is rather difficult without an absolute knowledge of all the conditions, to say what concrete will cost in winter time, as compared with in summer, at any particular location?

A.—I will tell you another way, if you are hauling in your coal to run your concrete mixers, the price on that concrete is taken with the hauling of that coal. We will take a percentage. If you are depending on a job, and you are hauling a long distance, certainly the price of your concrete goes up. If you should take a percentage of ten per cent, naturally you have boosted the price. I am talking of the ten dollar and fifteen dollar concrete, if I am estimating the job and everything is handy I will probably take the ten dollar concrete. If I am having a long haul I will take fifteen per cent.

Q.—Has that anything to do with what I asked you?

A.—You asked me about the percentage?

Q.—Wait a minute. Let me ask you another question. I asked you what I thought was a fairly reasonable question, and one that gave you a chance to get out an answer without making

a speech, and that was this, whether it was not a very difficult thing to fix the percentage of additional cost of winter work in concrete without first hand knowledge of all the factors in a particular site?

A.—Well, your question cannot be answered very well yes or no.

Q.—I think it can be.

A.—It would be worked on the percentage basis.

Q.—Who would work it on the percentage basis?

A.—The man who is estimating the job.

Q.—But what we are talking about is something that is done, and I say to you Mr. Boyd, take down in the city of Quebec, a man building a concrete structure, and he built all the concrete in the winter time, he poured all his concrete in the winter time. Can you tell me how much less it would have cost him to do it in the summer time. Now, do you not agree with me that the thing you ought to have in order to formulate any idea about that, is first hand knowledge of what all his costs were, and what additional things he was compelled to do by reason of the winter?

A.—Yes.

Q.—Are you willing to let it stop there at, yes?

A.—That is covering quite a lot. I swing back again to say that, that is a come back on a concrete contract. There should be a percentage on the concrete. If you are estimating winter work under winter conditions, you increase your concrete as far as the cost goes. Nobody knows what that cost is going to be. It depends on what the engineer asks you to do. I would say the average cost of heating concrete at any time would run fifteen per cent more than the summer cost.

Q.—And if you had a man who came along and showed you that it cost him fifty per cent more, you would not believe him?

A.—Well, it would be pretty hard.

Q.—You would not believe it?

A.—It would be pretty hard to believe. He would have to show me a lot of facts.

Q.—It would certainly take him a lot of time to show you anything. On your visit to Cedars, on the river, how long were you there?

A.—With Mr. McCrimmon?

Q.—Yes.

A.—I guess we got in there about half past three and pulled out about five o'clock. I know it was a little after six by the time we got down.

JOHN BOYD (for Defendant) Cross-examination.

Q.—And in that time you had dug a hole twelve to fifteen inches deep, and had taken out a sample, approximately six inches square?

A.—Yes.

Q.—Some of the people who were not there, like myself, say you dug three holes. Perhaps you did, did you?

A.—We raked away the surface. We did not dig three holes. We raked away the surface and probably scratched around, but we did not attempt to go in very far with holes. We would not call it digging holes.

Q.—The only specific instance of your experience in constructing a cofferdam where you dammed the whole river, is at the Little Falls?

A.—Oh no. You did not go far enough on with that thing. You only asked my experience with the Duke-Price.

Q.—You had all kinds of opportunities. I asked you...

A.—You switched off. You did not carry on that conversation at all.

Q.—Well now, will you say this: will you say that I did not ask you if you had had any other experience in building a cofferdam to deal with a whole river?

A.—Well, if you did, I misunderstood you. You were talking about Little Falls. You never asked me any further questions. I was in two different outfits practically controlled by the same people at that time, but they were entirely two different jobs. You only asked me about the one.

Q.—You say I only asked you about the one?

A.—Absolutely.

Q.—Well, the record will show. Now then, you said that if you were going to dig or excavate on a job that had twenty-five to thirty thousand yards of earth excavation, that you would use a shovel for it?

A.—Yes, that would be first thing you would consider would be using a shovel, I would imagine.

Q.—One of the first things you would consider, would be where the excavation was to take place?

A.—Yes, and the handy way to get rid of your excavation, how you were going to take it from the place you were digging it out.

Q.—You cannot just say there are twenty-five thousand yards of material in any spot to be shovelled?

A.—I would not say that altogether. I certainly would.

Q.—But I suppose with an orange peel you could dig not

say it was a hand proposition to dig out that much with that all right?

A.—An orange peel, unless it is in pretty free running stuff, is not designed for doing that particular class of digging.

Q.—You have to take one position or the other about this orange peel. This morning, you said the orange peel was the instrument for tough digging. Do you wish to change it?

A.—There is tough digging and hard digging. We classify that, not as an engineer's classification, but as a practical man's classification.

Q.—Is tough digging pretty free running stuff?

A.—Yes. It is covered with fairly large boulders and sand. An orange peel will dig into that stuff and pick it up. If you take hard digging it is a different proposition.

Q.—I suppose where you are working along a trench, the shovel would not be the very best type of equipment to have?

A.—Well, a shovel is used through a cut on railroads and that sort of thing.

Q.—Are they narrow trenches?

A.—Single track is about twenty feet wide at the bottom.

Q.—And how wide at the top.

A.—It depends on the material. The slope will go off one and a half to one.

Q.—But what you meant when you said you would put in a shovel was, that you would put in mechanical equipment, you would not have it as a hand proposition. That is what you meant this morning?

A.—No, there are all kinds of mechanical equipment. I would put in anything necessarily outside of the shovel, but the shovel would be the first thought in my mind that should go in there to handle 30,000 yards of material.

Q.—You would not consider the question of taking it in and taking it out?

A.—I think the cost of taking it in would more than offset any other equipment I would put in.

Q.—How far down the scale from twenty-five to thirty thousand yards would you get before you might think of anything else but a shovel?

A.—It is pretty hard to say.

Q.—If it were ten thousand yards, would you put a shovel in to do that?

A.—Provided I could use my shovel for other purposes.

Q.—Suppose you cannot put it in for other purposes, would you put it in for ten thousand yards?

JOHN BOYD (for Defendant) Cross-examination.

A.—Of course, if it was ten thousand yards I had to do, I would have a different price. Quantities govern prices naturally for taking equipment in.

Q.—You did not ask Mr. Aylen about the prices: you just said if there were 25,000 or 30,000 yards would use a shovel?

A.—I am not asking you about these prices. I say the prices would govern it.

Q.—The prices would govern it no matter what you were doing?

A.—On the quantities, it would govern the prices to a certain extent if you were taking in a lot of equipment.

Q.—And if it was 17,000 yards it would be a question of price I suppose?

A.—Well, 17,000 yards is beginning to get up into fairly good cuts.

Q.—But still, the price would be a very strong factor, and another factor would be the use to which you could put the shovel other than to excavation purposes?

A.—Yes.

Q.—And that would have to be a matter for the judgment of the man who was going to do the work?

A.—Yes, if he thinks he can do it cheaper another way, he goes and does it.

Q.—Will you tell me the names of other rivers than the Little Discharge where you cofferdammed right across the stream?

A.—No, I could not tell you that. I could tell you where a cofferdam was put into the stream, or past certain sections of it in swift waters, but I cannot say off hand, except down at Haley Falls across the Trent River.

Q.—You were just working as a carpenter on a crib work there?

A.—We did not go across stream there. We only went half way out.

Q.—So there is not any instance that you can call to mind now, with the exception of the Little Discharge where you cofferdammed right across the stream?

A.—But I have, as I say, cofferdammed besides that right across the stream?

Q.—Where?

A.—On the Saguenay.

Q.—Besides the Little Discharge?

A.—Yes That is in a power plant.

JOHN BOYD (for Defendant) Re-examination.

Q.—Where was it?

A.—At Chute au Caron. I had charge of some of the cofferdams.

Q.—Which one?

A.—The by-pass cofferdam.

Q.—With the by-pass cofferdams, you were not cofferdamming right across the stream?

A.—Let me finish with this. We started out. I started a cofferdam where the Monolith or Obelisk was dropped into the river which turned that water, joined on to the cofferdam. I had charge of taking a section of that out into the river.

Q.—Is that all you are going to say?

A.—Yes.

Re-examined by Mr. Aylen, K. C., of Counsel for Defendant:—

Q.—How does the Little Discharge compare with the Lièvre at the place you made the cofferdam, — how does it compare in width with the place at Cedars?

A.—Approximately the same width. I would not say may be that it was the same volume of water. It is pretty hard to say. I cannot just remember how much water. I would say it was the same width.

By Mr. St. Laurent:—

Q.—At what season of the year were you doing cofferdamming?

A.—In the fall and through the winter.

By Mr. Aylen:—

Q.—At Chute au Caron which you have mentioned, what is the nature of the river there? Is it swift?

A.—Well, the minimum flow of the Saguenay, the driving into the Saguenay was 40,000 second feet.

Q.—That would be a difficult operation ?

A.—Well, that cofferdam had to be built — the maximum flow I believe was 225,000 second feet. I think I did hear it said that the maximum flow in the spring was 225,000 second feet.

JOHN BOYD (for Defendant) Re-cross-examination.

By Mr. St. Laurent:—

Q.—That was in the Big Discharge?
A.—The Big Discharge. I mean the Saguenay.

By Mr. Aylen: —

Q.—You know Mr. Bishop, the president of William I. Bishop and Company. You have met him here?
A.—I just met him.
Q.—Did he ever offer you a job?

Mr. Forsyth:—I object to this question as not arising out of the examination in chief.

The Court reserves the objection.

A.—Yes, I was offered a job by Mr. Bishop in January 1929.

By Mr. Aylen:—

Q.—Whereabouts?
A.—Where to go to, or where?
Q.—Where to go to?
A.—Well, I think it was either on this particular work — either at High Falls or this one here. I understood it was a Cedars.
Q.—In what position?
A.—To take charge of this work. He said at that time there was a man in charge of the work as general superintendent and the superintendent on each of the works. If I remember right that was the conversation.
Q.—You were to be superintendent on one job, and another man in charge of all?
A.—Yes, and he was to put another man in charge of all.

Re-cross-examined by Mr. Forsyth, K.C., of counsel for Plaintiff.—

Q.—Where did you have the interview with Mr. Bishop?
A.—In Mr. Bishop's office in Montreal.
Q.—Where is that office?
A.—I think it was the New Birk's Building if I remember.

JOHN BOYD (for Defendant) Re-cross-examination.

Q.—And did he send for you to come there?

A.—Well, I got a wire from a third party. I was on a vacation at the time and got a wire from a third party.

Q.—Who was the third party?

A.—A fellow called Morgan. He called me up from long distance where I was and asked me if I could consider a job with Mr. Bishop. That was the first idea I had of a job. I said I would consider a job but he would have to boost me before I would.

Q.—Where were you working then?

A.—At the Aluminum Company.

Q.—And you told Mr. Morgan that he would have to boost your salary?

A.—Yes. Morgan said, "Well, the best thing you can do — he says, "Yes, I am sure he will boost it". He said, "The best thing you can do if you are interested at all in this thing, call in a see Bishop". Well, I says, "I am not keen on it, but as I am passing through Montreal probably I will go and see Bishop."

Q.—What were you passing through Montreal for?

A.—Going back to Chute au Caron.

Q.—From where?

A.—From a place called Trent River in Ontario.

Q.—Had you been up there for a holiday?

A.—I had been up there for two months. The Aluminum Company gave me two months vacation at that particular time.

Q.—And the cofferdams were all in?

A.—They paid me my salary. It was all right for me.

Q.—You went to see Mr. Bishop at any rate?

A.—Yes.

Q.—And was he boosting the salary?

A.—He certainly was.

Q.—But you would not go.

A.—No. I said, "Well, I might consider that." He said, "We don't have time to consider. You will have to give me an answer right now". I said, "I have been with the Aluminum Company for a long time." They treated me all rigth, and I am not going to go right away".

Q.—How long had you been with them ?

A.—I had been with the Aluminum Company the and Duke-Price, which is practically the same company from the latter part of 1923 to 1929.

Q.—And you said to Mr. Bishop, "Well, if I have to make up my mind now I won't go?"

A.—I was not in a way interested awfully in the job. It

was going to be a kind of tough proposition the way things were.

Q.—You thought that you would not get into a tough proposition ?

A.—Oh no. I had a position. I was holding quite a good position. If Mr. Bishop had may be come up a little higher than even what he had come up, I might have gone. That is a different thing. I would have tackled any proposition for the cash.

Q.—Joking aside, do I understand you seriously to assert that Mr. Bishop offered you a job to go up there to work for him?

A.—Mr. Bishop offered me a job at a certain salary, and I asked where the job was, and he said it was up around Cedars Rapids, away up around Buckingham, Quebec way, and I asked then for time to consider that thing. He says, well, I would have make the decision mighty quick, and I said, "Well" I don't think I will consider it, and I will not leave the Aluminum Company without giving them sufficient warning that I am going to leave. They have been good to me, and have treated me all right". And he said then, "You can make up your mind", and I said, "No." That was the conversation that took place. I went back to Arvida that night.

Q.—Are you asking me to believe that the conversation between you and Mr. Bishop was just that short?

A.—It was just that short. He talked a few minutes about particular things. It did not last so very long. That was the only part that interested me, was the salary and the position, and therefore, I did not pay much attention to small talk.

Q.—Have you changed since then in your conversational habits?

A.—I have been answering questions. I was not carrying on a conversation.

And further deponent saith not.

JOHN E. McCABE (for Defendant) Examination in chief.

DEPOSITION OF JOHN E. McCABE

A witness produced on behalf of Defendant.

On this eighth day of March, in the year of Our Lord, one thousand, nine hundred and thirty-three, personally came and appeared John E. McCabe of Notre Dame des Laus, Merchant, aged 56, a witness produced on behalf of Defendant, who being duly sworn, doth depose and say as follows:

Examined by Mr. Aylen, K. C., of Counsel for Defendant:—

Q.—Do you operate a saw mill on the Lièvre River?
A.—Yes.
Q.—I understand it was your mill where certain logs were sawn, which went to Mr. Bishop, the contractor?
A.—Yes.
Q.—To the dam on the river?
A.—Yes.
Q.—How long have you been operating the saw mill there?
A.—The saw mill has been in existence for 65 years, but I have been operating it for the last 33 years.
Q.—Is it still there?
A.—It is still there.
Q.—When was it that you sawed this lumber for Mr. Bishop?
A.—I started to saw in the fall of 1928 up to 1929,
Q.—And at that time did you have the same equipment in your mill that you have now?
A.—The same equipment.
Q.—Will you tell me the nature of the saw you have there?
A.—It is a circular saw with inserted teeth in it.
Q.—What is the width of the cut that that saw makes in the log?
A.—About 25 inch board or plank you can take out with the circular.
Q.—What is the width of the saw?
A.—Of the cut?
Q.—Of the cut?
A.—The cut takes a quarter of an inch.
Q.—Have you ever had the experience in the saw mill of checking of any kind for your information, or otherwise, as to

how the output in board feet of the log compares with the measurement by the Quebec Log Scale before it is sawn?

A.—That depends on the quality of the lumber Some lumber you will run over the Quebec Rule, and other lumber that is faulty, punky, small lumber, we are under.

Q.—You know the kind of logs you were sawing for Mr. Bishop?

A.—The first year we sawed spruce down there, and then we were sawing in the winter of 1929 hemlock, and it was not so good.

Q.—Do you mean to say that at one time Mr. Bishop might have had a certain over-run and at other times and under-run on those logs, is that what you mean?

A.—Yes.

Q.—Speaking generally, as regards the lumber that you sawed there for Mr. Bishop, would you expect to get an over-run or not?

A.—Not on hemlock.

Q.—What proportion of the total logs that you sawed for Mr. Bishop, was hemlock?

A.—I suppose they would run 190,000 feet of hemlock I sawed.

Q.—But how many thousand feet did you saw altogether for Bishop?

A.—Pretty nearly a million feet.

Q.—Apart from the hemlock, what sort of a run would you expect it to be? Would it be an over-run?

A.—It might be a little percentage over the Quebec.

Q.—To what extent?

A.—Five or ten per cent.

Q.—And I understand there were some logs that you said you would not expect to get as much. What were those?

A.—On the hemlock.

Q.—And how would you expect the hemlock to come out?

A.—The hemlock was very faulty. The timber was not sound at both ends, and when we would saw them, it was practically nothing but slab wood we got out of them.

Cross-examined by Mr. St. Laurent K.C., of counsel for Plaintiff.—

Q.—Without referring to your records, as your memory serves you, there would be something over a million feet in all that was sawn?

JOHN E. McCABE (for Defendant) Cross-examination.

A.—If I remember right. I have not my books here.

Q.—And something less than a couple of hundred thousand feet of that was hemlock?

A.—Around that.

By the Court:

Q.—About 180,000 feet?

A.—Something about that.

By Mr. St. Laurent:

Q.—And that hemlock was pretty poor?

A.—Very poor. The timber appeared to be sound looking at it, but when you got into the dry rot practically it was nothing but slab.

Q.—On the other hand the spruce you say was very good?

A.—Very good.

Q.—And you do not think the hemlock, because of this dry rot, would give you an over-run?

A.—No, I am positive, because my own sawyer told me, we won't get out of it what the Quebec Rule gives.

Q.—Was not that being sawn into pretty short lengths?

A.—No, it was all 16 foot logs.

Q.—Were not the hemlock pieces being cut up because of some faults?

A.—No. I have no edger in the mill. It was just a circular, and it was all 16 foot boards that came out of it.

Q.—And what would not give you a 16 foot board went into slabs?

A.—Went into slabs.

Q.—And this sawyer in an experienced man?

A.—Yes, he has been sawing for years for me.

Q.—He is a good man?

A.—Yes.

Q.—He could do just as well as anybody else?

A.—Well, he was trying to get all the timber he could get out of it.

Q.—And this was not being edged, so they were even waney edges?

A.—We edged all the timber boards. They were all edged.

Q.—Was not some of it sawn into dimension stuff?

A.—No, it was mostly all inch board and two inch. Some three inch was ordered.

Q.—No eight by eight or six by six?

A.—Some, but very little. The hemlock was almost all sawed.

Q.—But the spruce?

A.—The spruce is mostly inch and inch and a quarter, inch and a half and two inch, and then, of course, there was dimension stuff.

Q.—But was there not quite a large proportion of dimension stuff.

A.—I could not say exactly. If I had my books here I could tell you.

Q.—As a matter of fact, you rendered bills for this?

A.—Yes.

Q.—So that we can see from the bills the details?

A.—Yes.

Q.—And you would get a bigger over-run on the dimension stuff than you would say, on the boards?

A.—Why, certainly.

And further deponent saith not.

DEPOSITION OF ALFRED GINGRAS

A witness produced on behalf of Defendant.

On this ninth day of March, in the year of Our Lord, one thousand nine hundred and thirty-three, personally came and appeared Alfred Gingras, of the city of Verdun, Lumberman, aged 45 years, a witness produced on behalf of the Defendant, who being duly sworn, doth depose and say as follows:

Examined by Mr. Aylen, K. C., of Counsel for Defendant:—

Q.—How long have you been engaged in the lumber business?

A.—Thirty years.

Q.—What has your experience been during that time? What sort of work have you been engaged in?

A.—As inspector mostly, and cutting out logs into lumber.

Q.—That is, measuring and sawing logs?

A.—Yes.

ALFRED GINGRAS (for Defendant) Examination in chief.

Q.—Have you ever owned a mill yourself?

A.—Yes.

Q.—Do you own one now ?

A.—Yes.

Q.—For how many years have you been operating your own mill?

A.—Seven years, in Labelle County.

Q.—In connection with your mill you buy logs and saw them after, and sell the product?

A.—Yes.

Q.—Previous to operating your own mill, where had you been operating a mill in the Province of Quebec?

A.—I started in Hawkesbury, with the Hawkesbury Company, and was there for seven years, and then I went as an inspector for Robert Cox for eleven years.

Q.—What was Robert Cox engaged in?

A.—They were importers. They used to buy goods and export lumber.

Q.—I suppose, in your experience, you have acquired some knowledge of the Quebec Log Scale?

A.—Yes.

Q.—Would you tell me from you knowledge and experience where logs varying from seven inches to fifteen inches in diameter are sawn in a mill with a single circular saw, and without an edger, how the output would be obtained ; how would you expect the output in board feet to compare with the measurement in the run of the Quebec Log Scale, assuming they had been sawn out of one and two inch boards?

A.—I think they would have much difficulty in getting out their lumber measurement equal to their log scale.

Q.—That has been your experience?

A.—Well, on small scale they would hardly get out their log measurement.

Q.—Logs sawn to fifteen inch diameter, would you call those small logs?

A.—Very small.

Q.—Supposing the waney corners or edges were left on, how would that affect them?

A.—It would increase it a very small percentage.

Q.—Supposing the waney corners were left on, how do you think the output would compare the log scale ?

A.—Without having an edger, they would lose what they might gain by leaving the waney edge off. They would just

about meet the log measurement, I suppose, or a little bit less, if anything.

Cross-examined by Mr. St. Laurent, K. C., of Counsel for Plaintiff:—

Q.—I understand you were seven years with the Hawkesbury Lumber Company ?

A.—I was.

Q.—And then, eleven years with Robert Cox?

A.—Yes.

Q.—Was that in Quebec or in Ontario?

A.—Hawkesbury, that was in Ontario, while I was in Hawkesbury, but since then it was in Quebec with Robert Cox and Company, and I used to do aill the shipping in the Quebec Division.

Q.—Was it boards or dimension stuff they were getting out?

A.—Mostly lumber, one to five inches thick.

Q.—In handling seven to fifteen inches, you say you would call them small logs?

A.—Very small, very small average.

Q.—What would it have to be so you would not call them small logs?

A.—It would have to be larger than those.

Q.—How much larger?

A.—Well, it is hard to say what percentage of small there would be, seven to eleven.

Q.—Seven to fifteen?

A.—Seven to fifteen, it is liable to be probably 75 per cent — seven and eight for that matter.

Q.—It is because you are figuring there would be a very large proportion that would be sevens and eights?

A.—I imagine it would be strongly seven to ten anyway.

Q.—Would you not be more apt to find the larger number in an average of No. seven to fifteen, to be logs of 9, 10, 11 and 12?

A.—That all depends. Sometimes you will on certain lots, but as a rule you will always get a far larger percentage of small than large.

Q.—You would be referring to something that was the run of one cut?

A.—No, not as one cut. In most cuts I would say, unless it was picked specially.

ALFRED GINGRAS (for Defendant) Cross-examination.

Q.—I presume you know the Maclaren firm?
A.—Yes.
Q.—They handle a large quantity of logs?
A.—Yes.
Q.—Would you expect in taking a certain quantity of logs out of their lumber, and having it measured from seven to fifteen, that they would be mostly sevens and eights?
A.—I would say they would be a much larger percentage of sevens and eights than any of the rest of the sizes.
Q.—So, if the actual count of a certain log showed as this exhibit P-64 does, that these 553 pieces running from seven to fifteen, you would have 360 of nines, tens and elevens, that would be an unusual condition in your experience?
A.—You would get one measurement sometimes like that, and you would pick up another specification that would be a whole lot smaller. You could not depend just on that one specification. You might get a specification that does not give quite as good as that one, probably out of the same log.
Q.—Is it to your knowledge the Maclaren Company was using much smaller stuff for pulp wood?
A.—I don't know about that.
Q.—But, in your opinion, would that affect the average of such logs that were set aside to be sawn into lumber?
A.—Oh, it certainly would.
Q.—I understand your answer was predicated upon the sawing into boards of one or two inches with a circular saw?
A.—Yes.
Q.—Sawing into dimension timber would be quite different, would it not?
A.—Oh, a whole lot different.
Q.—And the fewer cuts put into the piece the greater the feet board measure you would get out of the piece?
A.—Well, it would be saving the saw cuts.
Q.—And if you were sawing into dimension timber, is it your experience that you would get an over-run over the Quebec scale?
A.—Yes, you would get a little, I would say.
Q.—Your experience has not been that you get up to 30 per cent over-run?
A.—No.
Q.—It has not been?
A.—No.
Q.—Have you ever done any sawing yourself?

ALFRED GINGRAS (for Defendant) Re-examination.
Wm. T. OWENS (for Defendant) Examination in chief.

A.—I have never sawn myself, but I have looked after a whole lot of sawing.

Q.—And it has never been your experience to get any thing like a thirty per cent over-run?

A.—No, not with a circular mill.

Q.—Not with a circular saw in a mill?

A.—No, not with that type of mill.

Re-examined by Mr. Aylen, K. C., of Counsel for Defendant.

Q.—What do you mean by dimension timber? What size would that be?

A.—Sometimes they might make 6 x 6, and sometimes 7 x 7 or just practically take the slabs off and square the rest, I suppose.

And further deponent saith not.

DEPOSITION OF WILLIAM T. OWENS

A witness produced on behalf of Defendant.

On this nineth day of March, in the year of Our Lord, one thousand nine hundred and thirty-three, personally came and appeared William T. Owens, of Montebello, Quebec, Lumber Merchant, aged 50 years, a witness produced on behalf of Defendant, who being duly sworn, doth depose and say as follows:

Examined by Mr. Aylen, K. C., of Counsel for Plaintiff:—

Q.—How many years have you been engaged in the lumber business?

A.—Thirty years.

Q.—During that time have you had experience in operating a mill?

A.—Yes, twenty years.

Q.—You own a mill at the present time yourself?

A.—For the last twenty years.

Wm. T. OWENS (for Defendant) Examination in chief.

Q.—You have been operating it continuously for the last twenty years?

A.—Twenty years.

Q.—And what sort of lumber do you saw there? Hard wood or soft wood?

A.—Soft wood and hard wood ; mostly soft wood.

Q.—Have you become familiar in the course of this work with the Quebec Log Scale?

A.—Yes, I have.

Q.—I want you to give us your own opinion from your knowledge and experience of this matter : with logs running from ten to fifteen inches in diameter, sawn into one and two inch boards at a mill where there is a single circular saw without any edger, how would you expect the output in board feet to compare with the measurement in the run of the Quebec log scale?

Witness:—Was this saw mill you refer to an inserted tooth saw, or a solid tooth saw?

Counsel:—An inserted tooth saw?

A.—With an inserted tooth saw they would not get any over-run at all in logs from seven to eleven inches. Probably from eleven inches up they might get a very small over-run.

Q.—What percentage ?

A.—Two or three or four per cent, depending how they sawed it.

Q.—In getting these figures, would there be any difference if waney edges were left on?

A.—Yes.

Q—What percentage?

A.—Not very much, because if they left too much waney on, they could not call it really merchantable lumber.

Q.—How much would it increase the over-run, if any?

A.—Probably five per cent.

Q.—What about dimension timber, if some of these logs were sawn into dimension timbers?

Witness:—What size about? 6 x 6 do you refer to?

Counsel:—Supposing some of it was sawn into 2 x 6, and some 2 x 8 or 4 x 6, how would you expect the over-run to be ?

Wm. T. OWENS (for Defendant) Cross-examination.

A.—2 x 6 would take at least a nine or ten inch log to make that. The might break even with that size.

Q.—And the 2 x 8?

A.—Yes, 2 x 8, they would break even too.

Q.—And 4 x 6?

A.—4 x 6, they might get a little over-run.

Q.—About how much?

A.—They should get a three or four per cent over-run.

Q.—Did you ever operate a circular tooth saw in your mill?

A.—Well, I operated a circular tooth saw from 1910 to about 1919. We could not break even ; we could not get our log measurement out, so about 1919 we took that mill out and put in a band mill, a double cut band mill.

Cross-examined by Mr. St. Laurent, K. C., of Counsel for Defendant:—

Q.—If lumber was going to be used for the temporary purposes of scaffolding, in doing concrete work etc., I suppose the waney edges would be the loose sections?

A.—Not in concrete work. You would have to have square edges for concrete.

Q.—For concrete forms?

A.—Yes.

Q.—But for scaffolding and thing like that?

A.—Oh yes.

Q.—Will you look at these two exhibits which have been filed as P-62 and P-64, showing the number of pieces of the various sizes in a certain quantity of logs which ran from six to fifteen inches, just so that you can get an idea of the way they were distributed.

Witness:—These logs averaged roughly ten feet, Mr. St. Laurent?

Counsel:—Here you see, in P-64, the bulk is the nines, tens and elevens, and in P-62, sevens, eights, nines, tens and elevens, about evenly distributed.

A.—Yes.

Q.—And the sizes, thirteens and fourteens?

A.—No. There are more sizes.

Q.—But the bulk is in the middle quantities?

A.—Yes, that is right.

Q.—That being the kind of logs we are dealing with, have you ever had a sawyer who could get, in sawing that stuff into one inch and two inch, an over-run over twenty-five per cent?

A.—No, I never did.

Q.—You never had that kind of sawyer?

A.—No, I never saw him.

Q.—And if, by actual measurement the over-run obtained out of 776 such logs, or 12,900 feet, you would like to have that sawyer?

A.—I certainly would.

And further deponent saith not.

DEPOSITION OF JOSEPH SKERL

A witness produced on behalf of Defendant.

On this ninth day of March, in the year of Our Lord, one thousand nine hundred and thirty-three, personally came and appeared Joseph Skerl, of Masson, Quebec, General Contractor, aged 32 years, a witness produced on behalf of Defendant, who being duly sworn doth depose and say as follows:

Examined by Mr. Aylen, K.C., of counsel for Defendant.

Q.—Did you work for the Bishop Company when they were building the Cedars Rapid Dam on the Lievre River?

A.—Yes.

Q.—Previous to that, had you ever had any experience in construction work?

A.—Yes.

Q.—Would you tell me some of the places where you have worked, where they were building dams or works of that kind?

A.—I was working at Farmers Rapids for Fraser-Brace.

Q.—For Fraser Brace, at the Farmers Rapids, that is, the Gatineau River?

A.—Yes.

Q.—Where the Gatineau Power Company was doing construction work.

JOSEPH SKERL (for Defendant) Examination in chief.

A.—It was the International. I was working at Paugan Falls.

Q.—Also for Fraser Brace?

A.—Yes.

Q.—Paugans Falls of course, is where the Gatineau Power Company's Power house is?

A.—Yes, and from there I went to Arvida.

Q.—What work was going on there?

A.—For the Aluminum Company.

Q.—What sort of work did you do on these other jobs before going to Cedars?

A.—Before I went to Cedars for Fraser-Brace I was handling powder, dynamite. In Arvida I was working as a pipe fitter.

Q.—When did you go to Cedars?

A.—In 1928. Before I came up there I was working at the Scottish Canadian Magnesite Mine at Grenville.

Q.—What about time of the year 1928 was it you came to Cedars?

A.—It was the month of December when I came there.

Q.—And how long did you stay there working for the Bishop Company?

A.—Till the month of March. The 8th of March was my last day's work.

Q.—The 8th of March, what year?

A.—1930.

Q.—So you were there a year and three or four months.

A.—Something like that.

Q.—When you first went there, what work were you doing?

A.—I was doing hand drilling and blasting.

Q.—Then, did you do some other work after that?

A.—I did. I was there as labor foreman for a while, and then rock foreman.

Q.—You are familiar then, with the layout of the ground up there. You know where the by-pass was?

A.—Yes.

Q.—Did you have anything to do with any blasting operations in the piece of land between the by-pass and the river that some of the witnesses have called the island?

A.—Yes.

Q.—What were you doing there?

A.—I was loading and blasting. I had my overtime, and the time I was foreman.

JOSEPH SKERL (for Defendant) Examination in chief.

Q.—Do you remember for about what length of time the blasting took place?

A.—It was the middle of March.

Q.—March of 1929?

A.—1929, but it was about the middle of March, something like that.

Q.—How long were you blasting there?

A.—I just loaded the shot on the south east of the island — the south west, not the south east. I made a mistake.

Q.—When this shot which you speak off was sent off where did the rock go?

A.—It always flew pretty far.

Q.—In which direction?

A.—It flew mostly in the direction of south.

Q.—That would be....

A.—Against the other shore of the river. One was south and one was north.

Q.—This blasting was on the north shore?

A.—Yes.

Q.—Did all the rock get across the river?

A.—Not across. It did not go across the river. Some was lying right alongside the bank and some right in the middle of the rapid.

Q.—Were you there when they were placing the cribs of the cofferdam?

A.—Yes.

Q.—Apart from rock that may have been blown into the river in the manner you have described, did you ever see any rock being dumped in the river?

A.—Yes, I did.

Q.—When was that?

A.—We got some rock there before we closed up the cofferdam.

Q.—Before the cofferdam was closed up?

A.—Yes, and they had some rock after the sheeting was done.

Q.—I want to go back just for a minute to this big blast you have spoken of. Was any of the construction damaged by rocks, that you remember?

A.—It was. There was a bridge blown down. The hanging bridge that was close to the river.

Q.—That was damaged by the big blast you have spoken of?

A.—Yes.

Q.—Anything else?

A.—I don't know about anything else. The bridge was knocked down. Yes, the crib was.

Q.—Which crib?

A.—The crib on the north shore.

Q.—Is that was is called the abuttment crib, the north shore crib?

A.—Yes.

Q.—You have had a lot of experience in blasting. How would you describe this blast? Was it a very heavy one?

A.—It was heavy enough.

Q.—What do you mean by heavy enough? Do you mean pretty heavy, or not pretty heavy?

A.—Pretty heavy.

Q.—Coming back now to the rock in the river, I understood you to say that before the cofferdam was closed up, there was some rock dumped in the river and again after it was closed up?

A.—Yes.

Q.—Before the cofferdam was closed, was any rock dumped in the river?

A.—It was right on the closing crib No. 4.

Q.—Was the closing crib in place then?

A.—It was not in place then, before they closed down.

Q.—Before they brought down the closing crib there were some rocks in the river?

A.—Yes, there were some rocks there.

Q.—Did you have anything to do with putting them into the river yourself?

A.—I did put them there myself.

Q.—You saw them put in?

A.—I was right there too and put them in myself.

Q.—How big would these rocks be ?

A.—Some of them would be half a yard or three quarters of a yard, or a quarter of a yard. It all depends.

Q.—And where had they come from ?

A.—They came from the south side of the excavation.

Q.—Do you remember how many of them they put in?

A.—About a dozen, or something like that.

Q.—Just where was this with relation to the last crib ? When they brought down the last crib after they put this rock into the river, where was this in relation to the last crib? Where did they put the crib?

JOSEPH SKERL (for Defendant) Examination in chief.

A.—Some rock was left there, and they put the crib in and she would not come down all alone. We helped her with a derrick.

Q.—Where did the crib stop?

A.—It stopped right in the place.

Q.—Right where you put the rock ?

A.—Yes.

Q.—After the cofferdam was made water-tight, did you ever see what was under any of the cribs?

A.—I did.

Q.—Which one?

A.—Of crib No. 2.

Q.—Which do you mean by that?

A.—It is the center one. The second was put out of place.

Q.—The second was put in the middle of the river?

A.—In the middle of the river.

Q.—What did you see under it.

A.—There was a big stone.

Q.—What sort of stone?

A.—Stone from the island.

Q.—Do you mean from the blast?

A.—Yes.

Q.—Were there any other cribs that you noticed that were under them?

A.—No. 2 and No. 3 was all loose stone on the bottom.

Q.—All loose stone under No. 2 and No. 3?

A.—Yes.

Q.—You saw that?

A.—Yes.

Q.—Where did the loose stone come from?

A.—It came from the shots on the island.

Q.—After the cofferdam was built and sheeted you said some more rock was dumped. Where was it dumped?

A.—On the south side, from south going north.

Q.—From south going north they dumped...

A.—Some stone.

Q.—What sort of stone?

A.—About that size.

Q.—How big would that be?

A.—A man could easily handle it.

Q.—How far did they go from south to north?

A.—To crib No. 2.

JOSEPH SKERL (for Defendant) Cross-examination.

Q.—They came as far as crib No. 2?
A.—Pretty near.
Q.—Was that the only place above the cofferdam that they dumped that loose rock?
A.—No. They dumped the rock right up on the north shore from the island.
Q.—From the island where?
A.—From the island going down south.
Q.—From the island towards the south shore?
A.—Yes.
Q.—The same sort of rock?
A.—It was smaller and kind of rotten stuff.
Q.—How far out in the river did they go?
A.—The top was right starting No. 1 crib, but the bottom was going down a slope.
Q.—Do you know how they got that stone from the north shore?
A.—They built up a little track with dump cars, with flat cars and dumped by hand.
Q.—And I suppose, they ran the cars to the edge?
A.—Well, just dumped it off.

Cross-examined by Mr. St. Laurent K.C., of counsel for Plaintiff.

Q.—You said you were living at Masson?
A.—Yes.
Q.—Who were you working for at Masson?
A.—I was working for the Foundation Company. Now, I am not working any more. I mean, I am working at the same time for Major McCrimmon.
Q.—Major McCrimmon, is that the gentlemen who was mentioned yesterday as being an Engineer, who took this expert, Mr. Boyd, up to the work? Were you here yesterday?
A.—No, I was not.
Q.—Have you ever worked for the Maclaren Company?
A.—No.
Q.—Are you working on the property of the Maclaren Company?
A.—No. I don't know who this property belongs to.
Q.—What kind of work are you doing for Major McCrimmon?
A.—I am just keeping the house around there, doing all kinds of work down at the house and chauffeur.

JOSEPH SKERL (for Defendant) Cross-examination.

Q.—And do you know if Major McCrimmon is in the employ of the Maclaren Company?

A.—He is.

Q.—How long have you been with him?

A.—Just going on two months now.

Q.—And before that you were working for the Foundation Company at the Maclaren Works?

A.—At the Maclaren Works, I was working for the Foundation Company.

Q.—You worked there sometime in December 1928 until sometime in March 1930 for the Bishop Company?

A.—Yes.

Q.—And your first work was blasting?

A.—Yes.

Q.—You say that you put dynamite in for one shot on the island, about the middle of March 1929?

A.—Yes.

Q.—Was only one shot put in?

A.—On that side there was only one shot at that time.

Q.—Was it in one or more than one drill hole?

A.—Well, there were many holes.

Q.—They were all shot off at the same time?

A.—Yes.

Q.—When that was shot off, you say the suspension bridge was damaged?

A.—Yes.

Q.—The suspension bridge was right over the place where the shot was placed, was it not?

A.—It started alongside of it.

Q.—Do you mean to say there was any serious damage? It was knocked out of position?

A.—There was serious damage. There was damage enough. The working men were not there at the right time to start the work. Of course, we got the cable away all right.

Q.—It had to be put back again?

A.—Yes.

Q.—How long did that take?

A.—I don't remember now how long it took them.

Q.—A couple of hours?

A.—Well, more than that. The air line and the water line broke off.

Q.—You say that the north abuttment was also damaged?

A.—Yes. It was full of stone that came down from the island.

JOSEPH SKERL (for Defendant) Cross-examination.

Q.—Stones from the blast feel on top of the north abuttment?

A.—Yes.

Q.—Were they left there, or were they removed?

A.—No, they never removed them. They left them there.

Q.—So that if we have got pictures of that abuttment, we can see how much stone there was?

A.—You cannot see it, of course. If they took the pictures the right way, it is all right. You can see it easy on the bottom of the cribs, but after they close up on the bottom inside the cofferdam of the steel sheeting, and the water was going in, and the dirt was going through between the cofferdam and between the rock. How small were the small pieces that were blown up with this blast?

A.—It all depends. There were all kinds of pieces.

Q.—Were there pieces as small as a twenty-five cent piece.

A.—There were all kinds. There must have been.

Q.—I was not there. I want you to tell me?

A.—There must have been some a ton, more or less.

Q.—Pieces from one ton down to one ounce?

A.—It might be one ounce, may be less.

Q.—It may be even less than one ounce?

A.—Yes.

Q.—What about this north abuttment. Was it big pieces, or small pieces?

A.—It was all kinds.

Q.—What would be the biggest piece that went up?

A.—The biggest pieces were half a yard or one yard.

Q.—Do you say that there was any piece that rested on the north abuttment that was one cubic yard?

A.—Yes.

Q.—You do?

A.—Yes, I do. Of course, it was easy to see.

Q.—Was there one or more than one such sized piece?

A.—I cannot say how many. There was a big heavy pile.

Q.—There was a big heavy pile on the crib?

A.—A big heavy pile down there, going down the slope.

Q.—I am talking about on top of the north abuttment of the crib, did any big pieces of rock stay on the top of that?

A.—Oh, on top of the cribs do you mean?

Q.—Yes.

A.—No, there was not very big rock, but the big rocks fell in and broke right in the front.

JOSEPH SKERL (for Defendant) Cross-examination.

Q.—About how big were the biggest pieces that stayed on top of that north abuttment?

A.—On the north abuttment it took about two or three men to handle them.

Q.—Would they be about half a yard? Were there many such pieces?

A.—Into the crib, I cannot say how many. Of course, on the top there used to be a couple of them. I did not see what was inside.

Q.—In that kind of work, every time a shot is put in, the rock flies about, does it not?

A.—Yes, it flies about. It all depends.

Q.—And before it is shot off, notice is given to the men to get out of the way?

A.—Yes.

Q.—That is what always happens in these blasting operations?

A.—Well, that is what we always do.

Q.—You say to the north of the island, there was a rock pile?

A.—Yes.

Q.—Will you look at these two photographs which are numbered 35 and 36 in the book of photographs, and which Mr. Geoffrion yesterday wished to have marked as exhibits, and which we will now mark as P-108 and P-109, and say if the rock pile you refer to, is this rock pile which appears to jut out in the water. Is that rock pile which juts out, the rock pile which you referred to on the north of the island?

A.—No, it was under this one.

Q.—Under what?

A.—Under this pile. This pile here was removed.

Q.—The pieces of rock that had been broken up, were taken by the derrick, and were put there? You say there were some fell there too?

A.—Not this one here from the shop. It was a long time after the first shot went off.

Q.—Well, where was it that you were talking about a rock pile that resulted from the shot?

A.—It is right down here on that side. There is all loose stuff coming up after. There are two piles here. There is one pile, and there is another one.

Q.—I do not see two. I only see one.

A.—There is one pile here, and here you see some kind of dirt. There is the one we blasted first.

JOSEPH SKERL (for Defendant) Cross-examination.

Q.—You blasted off the top of that place which is to the left of the bridge shown on P-108?

A.—Yes.

Q.—You say that before the cofferdam was closed, you saw about twelve rocks being placed where crib No. 4 went?

A.—Yes.

Q.—And that you worked at placing those?

A.—Yes, I did.

Q.—Under whose orders?

A.—Under the orders of Mr. Lindskog.

Q.—When you say group No. 4, do you mean the one that is shown as No. 4 on P-37, and which is the first one ending at the south shore abuttment. Is that the one you mean?

A.—That is the south shore abuttment.

Q.—And when you talk about No. 4, you mean the one that has No. 4 written on it on this plan. That is the one you mean?

A.—Yes, that is the one I mean.

Q.—Just tell me where you saw these twelve rocks being placed?

A.—Right here in the middle.

Q.—Right under where No. 4 is at the present time?

A.—Yes.

Q.—And that is before it was placed there?

A.—Yes, before we placed it.

Q.—Why were those rocks put there?

A.—They were put on to test the current, to stop the crib from going down.

Q.—Am I to understand that they were to test the current and to form something against which the crib might stop, when it came down?

A.—Yes.

Q.—Then, they must have been put downstream?

A.—If we put them lower, the rock would go down with the current.

Q.—So your understanding was, that it was being dumped a little higher up than it was expected, to rest on the bottom of the stream?

A.—Not to rest right there, but they are supposed to go lower. Some rock was too heavy; it used to stay under.

Q.—Your understanding was, that they wanted this rock to be downstream of the crib, so that the crib might rest against it?

A.—Rest against it.

Q.—If it came down?

A.—If it came down.

Q.—And that in order to get it there, they let it fall a little higher up?

A.—Yes, that is what they did. Some of the stone was too heavy. It remained there.

A.—No, I am not a diver, but I was there where the water was.

Q.—You saw when the water was removed, that some of the rock had stayed higher up than intended?

A.—Yes. Of course, the crib was on then.

Q.—Will you look at this photograph which has been filed as D-37 and say if this, which appears to be the second group structure from the left hand side of the photograph, is the group No. 4?

A.—Yes, that is No. 4.

Q.—The second structure from the left is No. 4, and the rocks you are referring to, are those which are shown there?

A.—Yes, those rocks there.

Q.—But shown just below crib No. 4?

A.—Yes, those are right under, they went about half inside under the crib.

Q.—You say they went about half inside, that they were about half inside under the crib?

A.—Yes.

Q.—And half outside?

A.—Yes.

Q.—And some right outside the downstream face of the crib?

A.—Yes, some were right underneath the crib but not quite in the middle.

Q.—Some of the twelve rocks you had replaced were also at the downstream face?

A.—Yes.

Q.—Some were partly under the downstream face, and partly lower than the downstream face, and some were entirely under the crib?

A.—Yes, and under the crib, and some of them were right underneath. They used to go away, and underneath about half way inside. I was walking underneath the crib. You see the picture I showed you where the hole is, where we used to walk right in, about half way underneath.

Q.—Do you really mean that?

A.—I went in myself.

JOSEPH SKERL (for Defendant) Cross-examination.

Q.—You used to walk in under the crib?

A.—Yes. It is about four feet, you are standing up there, and then you have to crouch yourself.

Q.—You could stand up straight until you got in about four feet from the downstream face, and then you had to crouch in order to go in any further?

A.—Yes.

Q.—That is your evidence?

A.—Yes.

Q.—You also say you saw some loose stone being dumped in front of the cribs after the last one had been put in. Was that not after the sheathing had been put on?

A.—After the cofferdam was closed I said.

Q.—Did they not put in a lot of rock between the sheathing shown on P-37 and the cribs themselves?

A.—They put in a bit of stone there that side going up, going north.

Q.—This, I understand shows the form of the cribs, and what does the line A-B show?

A.—Sheeting.

Q.—This sheathing I understand, was supported on struts and beams that went out from the cribs?

A.—Yes.

Q.—Did they not put in some rock between the sheathing and the cribs?

A.—They did.

Q.—They filled that into make it solid?

A.—Yes, they did. On the north side the rock was not much good. From the top of the island it was kind of yellow.

Q.—On the sides between the crib and the sheathing on the north side?

A.—Was all filled up.

Q.—When they put rock down in from of the sheathing, was that not for the purpose of sinking some bundles of hay and brush?

A.—It might be.

Q.—I am not ask you if it might be. You were there?

A.—Yes, I was there. We had sand bags to put on the top of this brush and hay, and then we had sand, not sand quite, but dirt we dug from the north shore of the river going west. We had two scows. We used to haul over the stuff, and then they drew the stone over the south side. They put some dirt on, but they put one load of stone and one load of dirt on. They used to put in about thirty or forty yards of stone.

Q.—About thirty or forty yards of stone mixed with dirt?
A.—Yes.
Q.—That is, on the south side?
A.—The south side, going north.
Q.—Starting from the south shore going towards the middle of the river?
A.—Yes.
Q.—And there they mixed in rock and earth?
A.—Yes, one load of each.
Q.—Let me see if I understand this right. First of all, the put the brush and hay on, and then put sand bags on that?
A.—Yes.
Q.—Then, they put some gravelly or sandy stuff on top?
A.—Mixed it on the top.
Q.—And after putting that in, they put in a mixture of rock and earth? One load?
A.—One load of each.
Q.—And they went on until they had put in, according to your estimate, about thirty yards of rock?
A.—Well, about that, thirty or forty.
Q.—Do you mean that with the exception of the twelve big rocks that were put in for No. 4, with such other fragments of rocks as you saw when the place was unwatered, they came from this one shot on the island that you supervised?
A.—Yes sir.

And further deponent saith not.

DEPOSITION OF DANIEL W. JAMER

A witness produced on behalf of Defendant.

On this nineth day of March, in the year of Our Lord, one thousand nine hundred and thirty-three, personally came and appeared Daniel W. Jamer, of Buckingham, Quebec, Woods Manager of the James Maclaren Company, aged 33 years, a witness produced on behalf of the Defendant, who being duly sworn, doth depose and say as follows:

Examined by Mr. Aylen, K. C., of Counsel for Defendant:—

DANIEL W. JAMER (for Defendant) Examination in chief.

Q.—What is your profession ?

A.—Forest Engineer.

Q.—Are you a member of the Association of Forest Engineers of the Province of Quebec?

A.—Yes sir.

Q.—And you have stated that you were Woods Manager of the James Maclaren Company ?

A.—Yes.

Q.—Since when have you held that position?

A.—Since the first of the year 1929.

Q.—Briefly, what are your duties as woods manager?

A.—Looking after bush ranging, improvements, getting out timber and working up at Buckingham.

Q.—Is Mr. Coyle who has been mentioned in this case one of the men who is under you?

A.—Yes. He is our agent at Val des Bois. At that time he was at Notre Dame des Laus.

Q.—Will you tell us briefly the manner in which logs were driven on this part of the river where the dam is located, in the summer of 1929? I understand there is a lake some miles up the river?

A.—Lac des Sables.

Q.—How far above Cedars Dam is Lac des Sables?

A.—The lower end is approximately five miles.

Q.—And how were the logs brought down Lac des Sables?

A.—The logs were brought down to the head of Lac des Sables, to the hold boom, and at the upper end of Lac des Sables they were boomed out, and boomed 20,000 to 25,000 across with the Alligator and let go at the lower end of the lake.

Q.—They were brought with these booms, and then let loose again on the river at the lower end of Lac des Sables?

A.—Yes.

Q.—When, approximately, was the first boom taken across Lac des Sables and let go in the year 1929?

A.—It would be sometime around the first of June.

Q.—Can you tell me from then, until the 1st of August, how fast these booms would be brought across Lac des Sables and released?

A.—We brought over about half a million logs; I think a little better than that, a million logs from the 1st of June till the 1st of August, eight weeks. We must have had two or three booms a week.

Q.—Can you tell me approximately how long it would take

for a boom to empty at the lower end of Lac des Sables once you began to let the logs loose in the river?

A.—I think it would take around four or six hours.

Q.—And about how long after you let them go would you begin to arrive at the dam site?

A.—If there was no head wind they should arrive there in around twelve to twenty-four hours.

Q.—Do I understand that during the months of June and July that you have mentioned, these booms were let go regularly two or three times a week?

A.—Yes.

Q.—Would the time between booms be approximately the same, or would it vary?

A.—Pretty well the same.

Q.—Once you opened the boom and began to let the logs go, would you let them run away until the boom was empty?

A.—We would let them go as fast as they would.

Q.—You would let them go until the whole boom was gone?

A.—Yes.

Q.—How often, during that summer, would you be at Cedars yourself?

A.—I would be there perhaps once or twice a month.

Q.—Were you there when there was a jam of logs in the by-pass, in the month of August?

A.—Yes.

Q.—Did you see the jam form ?

A.—No. I saw it after it did form.

Q.—You saw it after it was formed?

A.—Yes.

Q.—Were you sent for?

A.—Mr. Coyle telephoned me at Mont Laurier at noon, around the 20th or 22nd of August, and told me there was a jam in the by-pass.

Q.—Did you go down?

A.—Yes. He asked me what he would do about it, and I told him to take the jam out, but if it was necessary to use any dynamite, not to use any.

Q.—Not to use any?

A.—Not to use any of ours, that if it was necessary, to have the contractor do the dynamiting.

Q.—What was your reason for that?

A.—The jam was in the by-pass right in the concrete pier.

Q.—You did not want to take any responsibility?

A.—I did not want to take any responsibility.

DANIEL W. JAMER (for Defendant) Examination in chief.

Q.—You told Mr. Coyle to let the contractor use any dynamite, if it was necessary?

A.—Yes.

Q.—When you had got down there, they had not yet started to deal with the jam?

A.—Immediately after that, I started down, and got down there at twelve o'oclock, and they were just get ready to start to take the jam out at that time.

Q.—Did they use any dynamite before you got there?

A.—I do not think they had used any until I got there.

Q.—Did you see dynamite being used to break up that jam?

A.—Yes.

Q.—Do you know who set off the charge?

A.—I don't know, but it was one of our men.

Q.—Apart from the man who set off the charge of dynamite, what men were working there to remove that jam?

A.—We had six or eight men.

Q.—The Maclaren Company's men?

A.—Yes.

Q.—Under whom?

A.—Under Jack Coyle.

Q.—How long did you remain there?

A.—I remained there, until, I guess, around five or six o'clock.

Q.—Did you remain until the jam was broken?

A.—I remained until it started to pull.

Q.—What do you mean by, started to pull?

A.—I think the logs started to run out until it got loosened up.

Q.—How many logs would you estimate there were in that jam?

A.—About three or four thousand.

Q.—How many would there be in the by-pass, or above the jam, or in the river above ?

A.—I guess there would be five or six thousand.

Q.—Were there any more logs came down the river once this jam had broken up, and the logs that you have just mentioned that were above the jam, had gone through?

A.—No. That was the sweep.

Q.—That was the last of the drive for that year?

A.—The tail of the drive.

DANIEL W. JAMER (for Defendant) Cross-examination.

Q.—Did you ever personally receive any request from the Bishop Company to hold back logs in the river?

A.—No.

Q.—Not yourself?

A.—No.

Q.—Were any requests for the loan of booms made to you ?

A.—Not personally.

Q.—Or, for booms?

A.—No.

Q.—Not personally?

A.—No.

Q.—If there had been a gap of about thirty feet left between the cofferdam and the crib in the river and if guy booms had been placed to protect the logs through that gap, in your opinion, could the number of logs that came down the river during the months you have mentioned, pass through?

Witness:—Did you say the gap?

Counsel:—An opening. Supposing there was a thirty foot opening in the river, and that the rest of it was blocked, and if there had been booms placed to direct the logs through this opening, do you think the logs would get through that opening all right?

A.—Well, if there was a guy boom put on to follow the current that is, not to cut the current too much.

Q.—If the booms had been placed properly, having regard to the current, would the logs have got through above, or would it have been necessary to have had men to push them?

A.—If there was a guy boom on that did not cross the current too sharply, the logs would go down themselves.

Cross-examined by Mr. St. Laurent, K. C., of Counsel for Plaintiff:—

Q.—Did you not have some conversation with Mr. Lindskog early in June about log difficulties?

A.—No.

Q.—You did not?

A.—No.

Q.—Did you, at any time, have any conversation with Mr. Lindskog?

DANIEL W. JAMER (for Defendant) Cross-examination.

A.—I never spoke to Mr. Lindskog about logs.

Q.—Did you speak to anyone there, Mr. Reiffenstein or any of the others, who were in charge of the works?

A.—No, I never spoke to anybody about logs.

Q.—Did you speak to anyone when you went there on the 20th or 22nd August?

A.—I spoke to our man Mr. Coyle, nobody else.

Q.—Did you ever make the suggestion that some of the difficulty could be evaded by gapping the logs at the head of Cedars, and feeding them through the rapids at a uniform rate?

A.—No.

Q.—You never heard of it?

A.—No.

Q.—Did you see the correspondence which was exchanged with your company in connection with the log driving?

A.—No.

Q.—You did not?

A.—No.

Q.—None of it?

A.—No.

Q.—You saw none of the letters written, or none of the letters received?

A.—No, not about log driving.

Q.—These booms used to collect 20,000 to 25,000 logs?

A.—Yes.

Q.—At the head of the lake?

A.—Yes.

Q.—And tow them across, tow them to the foot of the lake?

A.—Then we windlass them across.

Q.—And down at the foot of the lake you would take the boom from the logs?

A.—When we got to the end of the lake we would snap one end of the boom open and hold the snap, and let them go.

Q.—And they would go out into the stream just as fast as the current and what ever wind was prevailing, would take them?

A.—Yes.

Q.—Did not the wind have a considerable effect on the way they moved?

A.—It had a considerable effect in holding them back.

Q.—And did it not also sometimes have a considerable effect on shoving them forward?

A.—If there was a fair wind.

DANIEL W. JAMER (for Defendant) Cross-examination.

Q.—And if there was a fair wind going in the right direction they would move out quicker?

A.—Well, the river was crooked, that there was never a fair wind.

Q.—Did you do anything about them between that point and below the Cedars works?

A.—No.

Q.—Only on this occasion when you had the jam in the by-pass?

A.—Yes — well, that is the only thing I did about them.

Q.—That is the only thing you know about, is it not?

A.—I know that we had put a holding boom across the river above the jam at one time, I think, at Mr. Lindskog request, although the request was not made to me.

Q.—When was that done?

A.—That was sometime around the 1st of August.

Q.—After this jam they had had on the cofferdam piers?

A.—Yes, it would be after that.

Q.—Did you not admit that if the wind were in the right direction and swept a bunch of logs into a narrowing opening towards a gap, that they would jam?

A.—The river is too crooked for the wind to affect the logs in the river.

Q.—But when they got down towards Cedars?

A.—It is still crooked.

Q.—You do not think they could go down in lots that would jam into an opening?

A.—No, not in the wind.

Q.—With the wind or current, or whatever affected them? Have you any possible explanation for this fact, for the jam in the by-pass? It must have surprised you immensely?

A.—They jammed because there was no water to take them through.

Q.—Oh, is it because there was no water?

A.—No water.

Q.—And that was on the 20th or 22nd August?

A.—When the logs were let go the opening was in one snide and when they started it ran all right until two other snides opened up, and when the two other snides opened up, the water went down to a point where there was not enough water to float the logs.

Q.—What are these snides?

A.—Snides are openings between the piers of the by-pass.

DANIEL W. JAMER (for Defendant) Cross-examination.

Q.—Do you know what the flow was through the by-pass at that time?

A.—I don't know what it was in cubic feet per second. I know that it was not deep enough to float the logs.

Q.—Do you know what the normal cubic feet per second flow of the river there was at that time?

A.—At that time of the year?

Q.—Yes.

A.—It must be around 1000 or 1200.

Q.—And it is your opinion that there was less than going through the by-pass?

A.—I know there was not enough to float the logs anyway.

Q.—Is it because they were in more than one layer, or is it because there was not enough to float one cruise of logs?

A.—No, they stopped first, when they were running. They were only going along easy when the stopped first.

Q.—Were you there?

A.—No.

Q.—From whom did you get that report?

A.—I know, because that is the way they always do run.

Q.—You are surmising that it must have happened in that way ?

A.—I know they never go any other way.

Q.—You were there, and did not get any report about it?

A.—Yes, I got a report about it.

Q.—From whom did you get the report?

A.—From Mr. Coyle.

Q.—He was there when they commenced to jam. Was that his report?

A.—No, but he was there immediately before they commenced to jam. He was there when we let the logs go.

Q.—He was at the by-pass when you let the logs go?

A.—Yes, and he was there until most of them had passed.

By Mr. Geoffrion:—

Q.—Are you referring to Mr. Coyle?

A.—Yes.

By Mr. St. Laurent:—

Q.—The report you got from him was, they were going along pretty well?

DANIEL W. JAMER (for Defendant) Cross-examination.

A.—That is the report I got from him, that it was running well enough, so that he did not consider it necessary to stay to see the tail bunch through.

Q.—Would you be surprised to know that at that time the official record shows that the flow through the by-pass was 3,000 cubic feet second ?

A.—I would.

Q.—That is quite a substantial quantity of water, is it not?

A.—If it was spread out. I don't know what the flow was. I know there was not enough to float logs.

Q.—Did you know that the Bishop Company had been informed that it was your practice to handle these logs in booms of that quantity, and that that practice could not be interfered with, and that you intended to carry on the driving operations as usual?

A.—No, I was never acquainted with any correspondence.

Q.—You were not made acquainted with that?

Q.—You say that this jam occurred at the tail of the drive, about the 20th or 22nd of August?

A.—Yes.

Q.—Was that not quite late to be getting the drive down?

A.—No, that was fairly early, earlier I think, than usual.

Q.—So that if anyone suggested you would be by there by the first of August, he was being over optimistic?

A.—By the 1st of August?

Q.—Yes.

A.—We were pretty near over the 1st of August that year, but we were down in good time.

Q.—The 20th or 22nd is a considerable distance from the 1st ?

A.—We held the logs up around the fisrt of August.

Q.—Where?

A.—About half a mile above the dam.

Q.—And did you collect a large quantity there?

A.—No, we collected only the last boom.

Q.—So the last boom would have been ready to go through on the 1st of August if it had not been for that?

A.—It would have been ready to go through in the time it took, so to speak, from Lac des Sables, down to the boom, which is about five miles. It would take us two or three days.

Q.—By the end of the first week in August you would have been through?

A.—We would have been through.

Q.—So, if anyone did make the statement that you expected to be through by the 1st of August, it was a fair statement to make.

A.—Yes.

Q.—And you are quite sure there were no representations made to you personally, and that you made no representations to anyone with respect to the driving?

A.—I am pretty sure.

Re-examined by Mr. Aylen, K.C., of counsel for Defendant.

Q.—You mentioned that there was a boom placed across the river. Were you present there when it was placed?

A.—I saw the boom after it was placed.

Q.—Half a mile above the dam?

A.—Yes.

Q.—What was the purpose of that?

A.—The purpose of that was to hold the logs, on a request from the Bishop Company, and to enable them to get their cofferdam fixed up so they could run it through by themselves.

And further deponent saith not.

DEPOSITION OF JOHN T. COYLE

A witness produced on behalf of Defendant.

On this ninth day of March, in the year of Our Lord, one thousand nine hundred and thirty-three, personally came and appeared John T. Coyle, of Val des Bois, Quebec, Agent for James Maclaren Company, aged 57 years, a witness produced on behalf of the Defendant, who being duly sworn doth depose and say as follows:

Examined by Mr. Aylen, K. C., of Counsel for Defendant:—

Q.—How long have you been with the James Maclaren Company?

JOHN T. COYLE (for Defendant) Examination in chief.

A.—Forty-one years.

Q.—And Mr. Jamer has stated you held a position with them at Val des Bois. How far is that from the Cedars Dam?

A.—One mile.

Q.—Val des Bois is where you are located now?

A.—Yes — oh, Val des Bois is about nineteen miles.

Q.—And in the year 1929 where were you stationed?

A.—At Notre Dame des Laus.

Q.—And that is about a mile from the Cedars dam?

A.—Yes.

Q.—What was your work there in 1929?

A.—I was agent for the Maclaren people.

Q.—What did you duties consist of?

A.—I was engaged in river and lumbering operations from Buckingham to above Lac des Sables. That would be from Buckingham to about nine miles above Cedars.

Q.—That stretch of the river from Buckingham to nine miles above Cedars was in your charge as regards bringing down the logs, was it?

A.—Yes.

Q.—How often would you be at Cedars in the months of June, July and August of 1929?

A.—Mostly every day.

Q.—Do you remember when the logs first began to come down that year?

A.—About the first week in June.

Q.—Do you remember the cofferdam that was built there?

A.—Yes.

Q.—Did you see the various cribs being put in place from time to time?

A.—Yes.

Q.—Do you remember the placing of the first crib in the river?

A.—Crib No. 1 was placed about the middle of June.

Q.—Was anything done after this crib was placed, to keep the logs from piling up on it, or to keep the logs away from it?

A.—While they were building the crib?

Q.—While they were placing it?

A.—While placing the crib there was no boom.

Q.—After it was placed, to keep the logs away from it?

A.—There was a light single boom from the north shore to Crib No. 1.

Q.—Who put in that boom?

A.—The Bishop people.

Q.—Where did they get the logs?
A.—From the river, from Maclaren's.
Q.—Do you know what length of logs were in that boom?
A.—They were spruce logs, mostly sixteen feet.
Q.—How was that boom placed? From where?
A.—From the north shore, angled across the current.
Q.—What was it attached to?
A.—To the north shore.
Q.—The lower end?
A.—To crib No. 1, to the south side of crib No. 1.
Q.—That would be the outside?
A.—Yes.
Q.—Did this boom keep the logs away from this crib No. 1?
A.—No, not altogether.
Q.—What happened?
A.—The boom was too light. The logs used to go under this boom.
Q.—Did you ever have any conversation with the Bishop employees about placing that boom, or as to the building of it, before it was placed?
A.—No, but I saw it the day they placed it. After they placed this boom, I told some of the Bishop men that I did not think this boom would suit the purpose it was put up for.
Q.—You told them that just after it was placed?
A.—Yes.
Q.—What made you think it would not serve its purpose?
A.—Because the boom was too short, and too much across current.
Q.—When you say it was too short, what do you mean?
A.—It was too much across the current.
Q.—They should have had it longer, and then it would have stood up?
A.—It would take a stiff boom.
Q.—What do you mean by a stiff boom ?
A.—It would take a stiff double boom.
Q.—How would that be made?
A.—It would take about two pieces bolted together, and in sections and these section chained together.
Q.—From your experience as a river man, do you think a stiff double boom which you have mentioned, would have kept the logs away from this crib?
A.—Yes.

JOHN T. COYLE (for Defendant) Examination in chief.

Q.—At any time when the two cribs, Nos. 2 and 3, were being placed, did you see any boom to keep the logs away from there?

A.—Not at that time.

Q.—Later on then, after the cribs Nos. 2 and 3, were in place, was anything done to hold back the logs in the river?

A.—Yes. Mr. McIntosh asked me at a certain time to put a boom across. Mr. Lindskog wanted me to hold back the logs.

Q.—Was that the boom that Mr. Jamer referred to a few moments ago ?

A.—Yes.

Q.—About how far above the dam was that?

A.—About half a mile.

Q.—Who put that boom there ?

A.—I had it put there.

Q.—For what purpose? Why did you put it? What was it supposed to do?

A.—To keep the logs back from going down on to the cofferdam.

Q.—And did it keep them back?

A.—Yes.

Q.—Do you remember the date when that was placed?

A.—It was about the last of July, somewhere about the 29th of July or the 1st of August. I could not say the date.

Q.—How long was that boom left there to hold the logs?

A.—We opened it on the 21st August.

Q.—Who decided when it would be opened ?

A.—Mr. Lindskog told me, or sent me word.

Q.—Mr. Lindskog sent you word to let the logs go, and you did so?

A.—Yes.

Q.—Where did the logs go when they came down?

A.—In the by-pass.

Q.—What was it sent them into the by-pass?

A.—Mr. Lindskog had asked for a boom.

Q.—Had asked who?

A.—Asked one of his foremen, Mr. Bishop's foremen. Mr. Bishop's foremen asked me for a boom.

Q.—Asked you for another boom?

A.—Asked me for another boom, and he placed it from the south shore to the by-pass.

Q.—And what was the purpose of that boom ?

A.—To aid the logs into the by-pass.

JOHN T. COYLE (for Defendant) Examination in chief.

Q.—Did you lend him a boom ?
A.—Yes.
Q.—Who put it in place ?
A.—One of Mr. Bishop's foremen.
Q.—Did it work all right?
A.—Yes.
Q.—So, when the logs came down, this boom sent them into the by-pass?
A.—Yes.
Q.—You have said that this request was transmitted to you about the 1st of August or the end of July, to hold back the logs?
A.—Yes.
Q.—At any other time during the season, did you receive any other similar requests to hold back the logs?
A.—No.
Q.—Did you ever receive any request for the loan of a boom, except the one you have mentioned, to put the logs into the by-pass?
A.—No.
Q.—Did you ever receive any request from the Bishop Company to build a boom yourself and put it in the river, except the one you have mentioned, half a mile upstream?
A.—No.
Q.—Can you tell me why the logs were held up for three weeks?
A.—Because there was not sufficient water in the by-pass to pass them through?
Q.—How would you know that? During the first three weeks in August, how was the water in the by-pass?
A.—There was not any at all.
Q.—Was it all going down the river?
A.—In August?
Q.—Yes.
A.—They would have to be held after putting the boom across.
Q.—I am speaking about the water, not the logs?
A.—The water was going down the river at that time.
Q.—How was the river in August 1929? Was it high or low?
A.—It was normal.
Q.—For that time of the year?
A.—Yes.

JOHN T. COYLE (for Defendant) Examination in chief.

Q.—Where were you when the logs began to go into the by-pass?

A.—I was there.

Q.—Do you remember just what time of the day it was that they began to go in?

A.—The logs started to go in about seven o'clock in the evening, and they ran till about twelve that night.

Q.—Were you there during all that time?

A.—I was there all the time. I had other men with me.

Q.—Watching?

A.—Watching. We left after that.

Q.—Do you know when this new boom was opened up above, and when the logs were let loose?

A.—We opened the boom about ten o'clock that morning.

Q.—So that it took them till nearly seven o'oclock at night to get through the by-pass?

A.—Yes.

Q.—That seems quite a long time?

A.—Well, there was a head wind.

Q.—There was a head wind again them, and it took all that time to get down to the by-pass?

A.—Yes.

Q.—You said the logs ran through from seven o'clock till nearly midnight?

A.—Just about twelve o'oclock.

Q.—You were there all that time?

A.—Yes.

Q.—Did you go away after midnight?

A.—Yes, we left after that. Later, the logs jammed in the by-pass.

Q.—When did you get back there?

A.—I got back that morning; about three o'clock I came back.

Q.—Did somebody send for you?

A.—Yes.

Q.—What did you find then?

A.—I found this jam in the by-pass.

Q.—Did you do anything.

A.—I did not do anything.

Q.—When was this jam broken up?

A.—Two or three days after.

Q.—Did you receive orders from someone to break it up?

A.—I spoke to Mr. Lindskog. He told me I would have to take the jam out, so I phoned Mr. Jamer.

Q.—And he said you would have to take the jam out ?
A.—Yes.
Q.—What did you do then?
A.—I phoned Jamer at Mont Laurier, and he told me to do so, but if there was any dynamite to be used, not to use dynamite in this place, for a man of Mr. Bishop's to use the dynamite.
Q.—As a matter of fact, was that what was done ?
A.—Yes.
Q.—Who supplied the men, apart from the powder men?
A.—I did.
Q.—The men who worked in the by-pass then, breaking up this jam, were men of the Maclaren Company working under your direction?
A.—Yes.
Q.—Did Mr. Bishop supply powder?
A.—Yes.
Q.—Did you supply powder men?
A.—Yes.
Q.—Who did you give it to ?
A.—I left it where the powder men could get it, just on the shore.
Q.—How many logs would you think there were in this jam ?
A.—About three thousand.
Q.—You have said that Mr. Lindskog asked you to break up this jam, but you phoned Mr. Jamer?
A.—Yes.
Q.—How soon after Mr. Lindskog spoke to you was it that you told Mr. Jamer?
A.—About two days after.
Q.—Where was Mr. Jamer during those two days?
A.—He was some place up above Mont Laurier. I could not get him on the phone just at the time.
Q.—Do I understand you got in touch with him as soon after as you could?
A.—Yes.
Q.—You said there were about three thousand logs in this jam? How many would there be in the river above there still to come through?
A.—About six thousand.
Q.—And after those three thousand that were in the jam, and the six thousand above it went through, were there any more that came down that year ?

JOHN T. COYLE (for Defendant) Cross-examination.

A.—That was the last. That was the final sweep.

Q.—Were you present at any time when Mr. T. F. Kenny was speaking to Mr. Lindskog about logs ?

A.—Once.

Q.—Do you remember when that was ?

A.—It was sometime in July. It was about the middle of July.

Q.—Where did this conversation take place?

A.—On the south shore from the dam.

Q.—Do you remember what was said?

A.—I heard Mr. Kenny telling Mr. Lindskog that any time he wanted logs stopped running in the river, he would notify me.

Q.—Mr. Lindskog would notify you what would be done?

A.—If he wanted any boom timber, that I would supply him with boom timber.

Q.—That you would hold up logs on request and also supply boom timber?

A.—Yes.

Q.—And whenever you would receive a request for either of those things, did you comply with it?

A.—Yes.

Q.—Did you, yourself, have any conversation with Mr. Lindskog about these logs at any other time?

A.—I had with Mr. Lindskog, back in the same place, and I asked him if the logs were doing him any damage. He said, no, let them come.

Q.—You said it was after Mr. Kenny had spoken to him?

A.—Yes.

Q.—About how long after ?

A.—It might have been a week ; it might have been a few days, or a week or so.

Cross-examined by Mr. St. Laurent, K. C., of Counsel for Plaintiff:—

Q.—Did you know that we have in this record correspondence dealing with this log situation?

A.—No.

Q.—You did not?

A.—No.

JOHN T. COYLE (for Defendant) Cross-examination.

Q.—Did you know that on the 17th of June there was a letter written by Mr. Lindskog to Mr. Bishop, and sent by Mr. Bishop to the Maclaren Company, dealing with the matter?

A.—No.

Q.—You know Mr. Kenny, do you not?

A.—Yes.

Q.—He is one of the officials of the Maclaren Company?

A.—Yes.

Q.—From whom you take orders?

A.—Yes.

Q.—From whom you took orders at that time?

A.—Not at that time. I was taking them from Mr. Jamer.

Q.—But Mr. Kenny was over Mr. Jamer?

A.—Yes.

Q.—Did you know that Mr. Kenny had replied that nothing could be done about it?

A.—No.

Q.—And that if the Bishop Company wanted to spend any of their own money, it was welcome to do so?

A.—No.

Q.—Did you know, following that, the Bishop Company had called attention to the fact that under their contract, they were required to construct their cofferdams and work so as to permit logs to be driven by the site of the dam, but that they did not feel called upon to do the driving?

A.—No, I did not know.

Q.—You say that you heard this conversation of Mr. Kenny with Mr. Lindskog, and that you think it was about the middle of July. Was that the day Mr. Ferguson was up there?

A.—I don't know Mr. Ferguson. I could not say who they were. There were two or three other men there. I don't know who they were.

Q.—You do not know that one of those was the chief engineer who had charge of this work?

A.—No, I did not know.

Q.—Was Mr. O'Shea one the gentlemen who was along?

A.—He was there at the time.

Q.—You don't know any of the others who were there?

A.—I did not know any of the others who were around. There were two or three.

Q.—Was this after they had had the trouble with respect to the jam against the cribs?

A.—Yes.

JOHN T. COYLE (for Defendant) Cross-examination.

Q.—It was after they had had the trouble with the jam against the cribs?

A.—Yes. I never saw a jam against the cribs.

Q.—But you knew that they had one?

A.—No, I never knew of the jam against the cribs, Not a jam; I saw some floating logs, but not a jam, I never saw a jam.

Q.—You never saw a jam against the cribs?

A.—No.

Q.—You did not know that on the night of the 22nd July, the logs jammed up against the cribs there?

A.—No.

Q.—You did not know that?

A.—No. There was no jam.

Q.—What happened then, according to you? Were you there?

A.—Yes.

Q.—You were there on the 22nd July?

A.—I was there mostly every day.

Q.—I am asking you if you were there on the 22nd of July?

A.—Yes.

Q.—And on the 23rd of July?

A.—Yes.

Q.—And there was no jam?

A.—There was no jam. There were floating logs, but no jam.

Q.—If that is the way you wish to leave it, I am quite satisfied.

Mr.Geoffrion:—So are we.

And further deponent saith not.

DEPOSITION OF RICHARD E. C. CHADWICK

A witness examined on behalf of the Defendant.

On this ninth day of March, in the year of Our Lord, one thousand nine hundred and thirty-three personally came and appeared Richard Ellard Cardin Chadwick, of the City and District of Montreal, President Foundation Company of Canada, Limited, aged 48 years, a witness produced and examined on behalf of the Defendant, who, being duly sworn, deposes as follows:

Examined by Mr. Geoffrion, K. C., of Counsel for Defendant:—

Q.—You have handed me a Statement indicating your training experience?

A.—Yes.

Q.—And, it is a correct statement?

A.—It is.

Q.—Will you please file it as Defendant's Exhibit D-37?

A.—Yes.

Q.—I see you are a graduate of the Faculty of Applied Science of the University of Toronto, 1906?

A.—Yes.

Q.—Then you were engaged on structural design or engineering with the Canada Foundry Company, Limited, in 1906 and 1907?

A.—Yes.

Q.—Then you were a member of the firm of Oxley & Chadwick, structural engineers, in 1907, 1908 and 1909?

A.—Yes.

Q.—And, during this period you were also on the staff of the University of Toronto?

A.—Yes.

Q.—Teaching what?

A.—Mechanical drawing.

Q.—You were with the City Engineer's Office in Toronto, as Engineer in charge of bridges and docks, in 1909-1910?

A.—Yes.

Q.—Then you joined the Foundation Company of New York, as Engineer on the foundations for the Woolworth Building, in 1911?

A.—Yes.

Q.—Since then you have been with the Foundation Company of Montreal, in various positions ?

A.—For a short time I went back to New York, as Acting Chief Engineer of the Foundation Company of New York.

Q.—Otherwise you were connected with the Foundation Company in Montreal?

A.—Yes.

Q.—Ultimately becoming President and General Manager of the Foundation Company of Canada?

A.—Yes.

Q.—I see by the statement Exhibit D-37 apparently you have built 16 different dams and hydro-electric power plants?

A.—Probably a good many more than that, because some of those projects involved several dams.

Q.—Do you know anything about the Lièvre Development at Cedar?

A.—No, I have never visited the site of the work.

Q.—So, you do not know anything about that work at all ?

A.—No.

Q.—Do you know anything about the Lièvre River elsewhere?

A.—Yes, I have had a long experience on the Lièvre River, at Buckingham and at Masson .

Q.—How would the developments on this river compare, in magnitude, with those you have handled?

A.—The Lièvre River would be much smaller than some, and considerably larger than others.

Q.—I suppose in your practice you have had experience with orange-peels?

A.—Orange-peel buckets, yes.

Q.—What would you say as to the capacity of an orange-peel bucket to excavate frozen material without using dynamite?

A.—I would say an orange-peel bucket could not be used for frozen material without first blasting or breaking up the material in some way.

Q.—What is an orange-peel bucket good for?

A.—It is good for soft material, or it is good for loose material, or individual boulders, for example.

Q.—If I understand correctly the orange-peel excavates from the top, by the weight of the peel?

A.—An orange-peel bucket is a bucket composed of a number of leaves. It rests on the material it is intended to dig,

and digs by closing the bucket and have ring the teeth scrape along the material you are digging.

Q.—But, it is only its weight that is on the material?

A.—Its weight is resting on the material you are digging.

Q.—It is not pushed down into the material? It acts by its own weight?

A.—It is pushed down into the material by its weight.

Q.—It excavates from the top, downwards?

A.—Yes.

Q.—How does a steam shovel excavate?

A.—A steam shovel excavates in the opposite direction : from the bottom of the cut, up.

Q.—Against the face of the cut.

A.—Against a face. And, it is forced into the material it is digging by power, not by its own weight.

Q.—Can a steam-shovel excavate hardpan?

A.—Yes.

Q.—Assuming a contract to excavate, say, 18,000 cubic yards of earth, what would be the proper equipment, as between steam-shovel and orange-peel?

A.—I would very much prefer the steam-shovel.

Q.—I take it you must have had considerable experience in building cofferdams to unwater rivers?

A.—Yes.

Q.—What is the first step, if any, to be taken, before placing your crib, when you want to build a cofferdam to cross a river like the Lievre, so as to unwater it? I am assuming you know there is a by-pass for the river to be diverted, and a cofferdam to be built across the natural channel of the river, to unwater it?

A.—I should say the procedure would be to investigate the site, find out as much as you could about the conditions, and then design the cofferdam — that is, draw up a plan of it — and go ahead and build it.

Q.—I would like to have a little more detailed information than that. What would you do as regards finding the outline of the bed of the river on which you are to place your cofferdam? In the first place, is it important that it should be ascertained, and how could you go about doing it?

A.—I take it you are referring to a crib cofferdam?

Q.—Yes.

A.—You would have to take very careful soundings of the river at the places you were going to put the cribs, and you would have to put the cribs to fit the river bottom.

Q.—What do you mean by careful soundings?

A.—If the bottom is rough — that is, if it is irregular — we generally make a template (a raft the size of the crib we are going to build) and take soundings around that raft every foot. If it is smooth you might do it every two feet or three feet.

Q.—But, you must start by the first soundings to ascertain whether it is smooth or not?

A.—Yes.

Q.—Your first soundings would reveal whether it is smooth or not?

A.—Yes.

Q.—What would you say about soundings 20 feet apart ? One sounding every 20 feet ? One row of soundings across the site of the cofferdam, and the soundings being 20 feet apart?

A.—Those soundings would be of no use for the purpose of fitting the cribs to the bottom.

Q.—Is it advisable that the cribs be fitted to the bottom?

A.—Very advisable.

Q.—Why ?

A.—The purpose of a cofferdam is to shut out the water, and the closer you can make your cofferdam fit the bottom the tighter it is and the less filling material you must put in front of it to make it water-tight.

Q.—It has been suggested that the sheeting is the part that makes a cofferdam tight — and, possibly the toe fill — but that the cribs themselves need not be water-tight. What have you to say as to that, and as regards fitting the cribs to the bottom?

A.—I always feel the cribs should be fitted to the bottom as accurately as possible, otherwise the sheathing is going to be difficult to fit, and it is going to be more expensive to place, and you will have to put in a lot of filling material in front of the cofferdam to make it water-tight.

Q.—Why is the sheathing more difficult to fit ? If you have an irregular bottom, and you have cribs the bottoms of which are straight logs, why would you say that would make the fitting of the sheathing more difficult?

A.—In the first place, if you have a crib which is perfectly flat on the bottom, there are bound to be a lot of holes underneath it, and the water is flowing through those holes. Those would be holes between boulders, or any irregular portions of the rock. The water is flowing through there, and it would be impossible to put a diver down to fit the sheathing. He would be drawn into the hole. He would be drawn through the cofferdam, or, rather under the cofferdam.

Q.—Is that your complete answer to my question?

Witness:—Would you mind repeating your question?

Counsel:—Say you have an irregular bottom, and you have cribs the bottoms of which are straight logs, why should you say that would make fitting the sheathing more difficult?

A.—The impossibility of putting a diver down to fit the sheathing would be the principal objection.

There would be another objection, that inasmuch as each of those pieces of sheathing is a vertical plank which has to be fitted to the plank previously placed, if you have a big space betwen the bottom of the crib and the bed of the river you have no support for your sheathing at that point, and it is quite conceivable that after the sheathing was in it would deflect owing to the pressure of the water, and tend to open up the joints.

Q.—I gather from what you have said that you would take soundings so as to have the bottoms of the cribs fit the bottom of the river?

A.—Yes, the bottoms of the cribs must be fitted to the bottom of the river as accurately as possible.

Q.—What other requirements are desirable to have a good crib, for unwatering? as to the relative positions of the cribs to one another?

A.—The individual cribs forming the cofferdam must, naturally, be as close together as possible. It is advisable to avoid all openings between cribs.

Q.—Under good management, how close should the cribs be to one another?

A.—I would say the opening between individual cribs should not exceed, say, one foot.

Q.—What would be the reason for that? Always from the point of view that the objective is tight sheathing and nothing else?

A.—Before that cofferdam can be made tight, all openings betwen individual cribs must be closed in some way, and if the openings are wide the closing is very difficult.

Q.—Whatever openings are left between the cribs must be closed?

A.—Yes.

Q.—Must be closed by placing the sheathing, or something else?

A.—Yes.

Q.—And, you must have something behind the sheathing to support it?

A.—Generally speaking the openings must first be closed by some means independent of the sheathing.

By the Court:—

Q.—Before the sheathing is put on?

A.—Before the sheathing is put on.

The opening must be closed to the extent that the flow of water through it is reduced to a point where it is possible to put the sheathing on and get it properly fitted.

By Mr. Geoffrion, continuing,—

Q.—Would what you have said about a diver apply here also?

A.—Yes: that is what I have in mind. If you have a hole with water flowing through it, your diver would immediately be drawn into the hole.

Q.—Then, is there another requirement, as regards the relative positions? Apart from the cribs being close to each other, and being fitted to the ground, is there another requirement, as to the relative positions of the cribs to each other? I suppose it is not debatable: whether it is important or not is another question.

A.—Assuming the cribs are built to fit the bottom accurately, they must be placed in the position for which they were built.

Q.—I suppose putting them in line makes the placing of the sheathing easier ?

A.—Oh, yes.

Q.—But, I imagine if all the gaps were filled, and the bottoms were fitted, the result of lack of alignment would only be a matter of expense?

A.—Generally speaking every change in alignment, or every corner in your sheathing, give a point where it is difficult to make it water tight. We try to avoid corners, and try to get the sheathing in as straight a line as possible.

Q.—You have referred to a diver. Is a diver needed, and what is he needed for?

A.—The usual practice is to have a diver or guide the bottom end of this sheathing into its correct position with reference to the piece of sheathing previously placed. He must also see it fits the bottom, and he must, if necessary, mark the bottom of the particular piece of sheathing so that it may be cut to fit the irregular bottom. We are trying to make a water-tight joint, or a joint as nearly water-tight as possible.

Q.—If you have the bottoms of the cribs fitting the bottom of the river, and the gaps between the cribs closed, is there any danger in sending a diver down?

A.—I do not think the operation is particularly dangerous, if the cribs are tight and if they fit tightly.

Q.—You say a diver is used to see that the sheathing is fitted to the bottom?

A.—That is correct.

Q.—Would the diver be in a position to judge of the nature of the bottom ?

A.—Yes, I think a diver could determine the nature of the soil.

Q.—Would the frequent soundings you have already mentioned also indicate the nature of the soil? That is, whether it was all rock, or boulders and clay, or boulders and earth ?

A.—Yes, those soundings would indicate the nature of the bottom.

Q.—Suppose you have a crib fitting the bottom, and properly filled, and with the gaps between the cribs filled, or only small, could logs get entangled in the cribs ? Supposing there was a downrush of logs, which were not carried away by a boom, but came against the cribs, could they get entangled in the cribs ?

A.—There is a danger of logs being drawn into any hole or opening through the cofferdam. If everything is fitted tight, and if there are no opening, there is no place for the logs to be drawn into.

Q.—If the cribs did not fit the bottom, and if there were spaces between them, there would be danger of the logs being caught in those spaces?

A.—Yes, very grave danger.

Q.—And, if those openings did not exist, or if they had been filled, there would be no danger ?

A.—If the openings did not exist there would be no place in which the logs could catch.

Q.—A crib that is filled with stone cannot very well get a log lodged in its interior?

A.—It might occasionally get a log between two individual timbers forming the crib, but the log would not become jammed very tightly. It is conceivable that a log might enter between two timbers of a crib, and might stick there.

Q.—But, it would not go into the stone inside the crib ?

A.—It would not go very far in, no.

Q.—What do you say with respect to the ease of taking out logs in these circumstances?

A.—I would say that a log which is caught under the cribs — that is between the rock and the cribs — with a head of water against it, might be very difficult to get out. A log jammed into the crib itself would probably be quite easy to take out.

Q.—Supposing there had been a downrush of logs at a time when there were openings between the cribs, and possibly openings under the cribs because they had not been fitted, and the logs were jammed, what should be done?

A.—The presumption is that some of those logs will be drawn into those various openings, and they have to be taken out.

Q.—Can logs be taken out in those circumstances?

A.—I presume the logs could be taken out in any circumstances. It might be very difficult to take them out if they are on the bottom.

Q.—Between the cribs, and in the openings, would they be difficult to take out?

A.—It might be difficult to get a log out between the cribs, yes, quite difficult.

Q.—It depends on the circumstances?

A.—It depends on the depth of the water, and the swiftness of the current, and how the logs jam.

Q.—How difficult it would be depends on circumstances?

A.—Yes.

Q.—Without knowing the circumstances, can you give an opinion as to what method should be employed, or are there different methods?

Witness:—For taking logs out?

Counsel:—Yes.

A.—I can say this: in a general way you must get a chain, or a line, or a rope,or something of the kind, around the log, and

you must pull it out with a derrick, or a hoisting engine, or any means of exerting a pull on it.

Q.—What do you think of using an orange-peel to pull it out?

A.—An orange peel-can be used for getting those logs out.

Q.—I show you the photograph Exhibit D-28, and ask you to look at the sheathing in the vicinity of where the mark "X" appears. Will you tell me if you notice any irregularity or any peculiarity in the sheathing?

A.—I should say the sheathing is very irregular. The individual pieces do not seem to be fitted together very accurately.

Q.—It has been suggested that at a certain spot there, where the sheathing starts from the north, and the sheathing starts form the south, there was a "V" in the sheathing: in other words, the last sheets on each side seem to be close to one another down below, but are separated above, whereas the sheets at each end started vertically. What would that indicate as regards the condition below on each side of that "V"?

A.—That would indicate that the closure — and by that I mean the final section of sheathing — would be fitted into that "V" in some way, or fitted over it, to make it water-tight.

Q.—But, this "V" is high up. At each end the sheets are quite straight vertically, and farther on they meet in a "V". Does that suggests anything to the water-tight condition of the sheathing on both sides?

Mr. St. Laurent:—I object to the question as illegal, in view of the fact that there is no evidence in support of it. There is no evidence to the effect that the sheathing started out vertically at the ends, and developed into a "V". The only suggestion is by one witness, or possibly two, that a "V" was noticed. Mr. Ferguson did not notice it.

It is my submission the question is not justified by the evidence.

Mr. Geoffrion:—I suggest it is.

His Lordship:—I will take it under reserve of Mr. St. Laurent's objection.

A.—I do not think that "V" is a serious matter.

R. E. C. CHADWICK (for Defendant) Examination in chief.

By Mr. Geoffrion, continuing,—

Q.—It may be I am quite wrong. What is the effect of the sheathing inclining gradually from the vertical to the "V"?

A.—That means that the joints at the top of the sheathing are a little tighter than the joints at the bottom and that the accumulation of tight joints at the top and joints that are not so tight at the bottom results in that "V" in the centre.

Q.—Would that fact indicate less water-tightness of the sheathing below?

A.—Yes, it would mean the joints are wider at the bottom than they are at the top.

Q.—And, being wider they are more leaky?

A.—That is correct.

Q.—Speaking of the sheathing you see on the photograph Exhibit D-28, would you call it good water-tight sheathing, or are you able to form an opinion in regard to it?

Mr. St. Laurent:—The witness never saw the sheathing. He was never in the locality. I do not know there is any expert knowledge required to read this photograph, and I suggest this is not a proper question.

Mr. Geoffrion:—Surely I can ask him if it indicates leaky sheathing.

Witness:—As I said before, the sheathing is very irregular. It is a good deal out of plumb. I think I also said the joints are not tight.

By Mr. Geoffrion:, continuing:—

Q.—What does that irregularity involve, from the point of view of water-tightness?

A.—I do not think that sheathing is water-tight at all.

Q.—Coming now to the toe fill ahead of the sheathing, what have you to say as to the material that should be used for toe filling?

A.—It is generally conceded that the ideal material for a toe fill would be a mixture of sand and gravel, containing some clay or cementing material.

Q.—What have you to say about broken stones, or loose rock?

A.—Broken stones or loose rock, without some material to fill the spaces between the stones or the rock, would be useless as a filling material to make a water-tight fill.

Q.—If you dump loose rock into the river where the toe fill is to be, what precautions would you take to see that the other material gets between, under, and all around the stones, to fill up all the voids?

A.—You would have to get some finer material, and you would have to work it into the spaces between the loose rock. If you had dumped loose rock in where you were going to make a water tight fill, you would then have to put some material in that could be worked into the spaces between the rocks.

Q.—By that process could you work it in between the rocks?

A.—You would have to puddle it, or work it in with any kind of a stick, until it was drawn in by the current. You could use any kind of a stick, or rod.

Q.—You mean, ram it?

A.—Ram it in, yes. Or, take out the loose rock altogether, and start afresh.

Q.—One of the charges in this case is that the engineer made the contractor take out rock in thin layers, which made it more expensive ; and, further, that there was an over-run in rock of 167% over the quantities mentioned in the original plans. Is an over-run of 167% very extraordinary ?

A.—It would depend on where this rock was taken from, and the character of the particular operation.

Q.—What I want to know is whether that percentage of over-run in contracts is an extraordinary or unusual one?

A.—I would say it depends on where that particular operation takes place.

Q.—Generally speaking, how does an increase in quantities over those specified affect the contractor from a financial point of view, if he is paid for it ? Does it result in a loss, or a benefit, to him?

A.—If he is paid for the increased quantities, and assuming his figures are correct, it would result in a profit. An increase in the quantities on a contract presumably increases the profits.

Q.—From your experience, and from your knowledge of the Lièvre River, can you tell us what would be the extra cost of pouring concrete in winter?

Witness:—You mean pouring concrete in a dam — what we call mass work?

Counsel:—Yes.

R. E. C. CHADWICK (for Defendant) Cross-examination.

A.—I would say, in round figures about one dollar per yard.

Cross-examined by Mr. St. Laurent, K.C., of counsel for Plaintiffs.

Q.—As you said, you have never visited this site, neither when the work was going on, nor before, nor since ?

A.—No, I have not seen this particular site.

Q.—And what you have been giving us here is general information, much of the character of the information you imparted to your students when you were teaching them the profession in the University?

A.—I was not teaching this particular subject.

Q.—But, it is general information, or information of a general character?

A.—No: I think I have fairly answered questions.

Q.—I am not suggesting you did not fairly answer the questions; but, those answers conveyed general information about engineering practice?

A.—General practice as regards cofferdams.

Q.—I suppose what you know about the Lievre River is the knowledge you have acquired in carrying out works at other points on the river for the Maclaren Company?

A.—For the Maclaren Company and for others.

Q.—For others as well as the Maclaren Company?

A.—Yes.

Q.—You have done considerable work on the Lièvre River for the Maclaren Company, have you not?

A.—We are now putting in a power development on the river for the Maclaren Company.

Q.—At Masson?

A.—At Masson.

Q.—The very power development for which this storage reservoir was being provided by the erection of the dams at Cedar?

A.—Yes.

Q.—One of the two power developments being the storage which was being developed by the dam at Cedars?

A.—That is correct.

Q.—Would you agree with the description or definition of what is meant by a map showing the topography or site of works that was given by Mr. Ferguson as being: "Contours, or the surface, the nature and character, or what is on it"?

R. E. C. CHADWICK (for Defendant) Cross-examination.

Mr. Geoffrion:—This does not arise out of my examination in chief of the witness.

Mr. St. Laurent:—I think it does.

His Lordship:—I take it it is a preliminary question.

Mr. St. Laurent:—Yes, Your Lordship. I want to know if we are using the same language. If we are, I will have something to follow it.

Witness:—I think I would have to see the map.

By Mr. St. Laurent, continuing,—

Q.—Would you agree that if a map was called a map showing the topography of a given site it would show the surfaces, and the character of the surfaces, and what is on the surfaces?

A.—In a general way, yes, but it might not go into any degree of detail, or might be very general in its character.

Q.—I understood you to say that if you were going to cofferdam a river the first thing to do would be to secure information about the bed of the stream upon which your cofferdams were to be placed?

A.—That is correct.

Q.—And, if you had a point where your stream was, say, 140 or 150 feet wide, with a steep rocky shore on one side, and an inclined bare rock on the other side, and a map entitled "Map showing topography of the site", and this showed that there were elevations right straight across, marked "79.7 L (or ledge) 82-7 L, 83.4 L, 83.7 L, 86.2 L, 92.7 L,", would not that give you quite a lot of information about that site?

A.—I would expect a site such as you describe to show a good deal of bare rock on the bank that was sloping, and I would expect a good many boulders or fragments of rock on that bank that was steep. It is inevitable that they would fall off the steep bank into the water.

Q.—So, even though you had the elevation given in your map, with the letter designating ledge, you would not believe it?

A.—I would certainly check it up myself before I built a cofferdam on it.

Q.—You would not rely upon it as showing that the surface there was ledge?

A.—Not for the purpose of cofferdamming.

A.—Not for the purpose of cofferdaming.

Q.—Is that the result of what you get out of the books, or is it the result of your experience dealing with jobs that have been designed by other engineers?

A.—I think it is largely the result of practical experience.

Q.—Your experience has been that you prefer to do your own checking?

A.—My experience has been this: that an engineer takes soundings across the river largely for the purpose of computing his quantities, and largely for the purpose of locating his whole structure; but, when we come to cofferdam that site we must take a great many more soundings.

Q.—Do you believe in the accuracy of the soundings the engineer shows on this topographical plan?

A.—I would probably use those for the purpose of estimating the work in the first place, but I would check them up for the purpose of actually building it.

Q.—How are cribs that are used merely for cofferdamming, and to be removed as soon as the work is completed, built, and what are they built of?

A.—They are sometimes built of logs, and sometimes of squared timber.

Q.—Are they not much more frequently built of logs?

A.—Yes, I would say they are more likely to be built of logs than of squared timber.

Q.—Is it not a fact that the function of the crib in the cofferdam is to serve as a solid anchor against which you can place an impervious wall?

A.—It can be considered that way.

Q.—Is that not the real purpose of the cribs? The cribs themselves are not impervious, are they?

A.—I will say this: the more impervious the cribs are, the better the cofferdam is, and the less fill you need. It is entirely a question of dollars and cents whether I build a crib that fits the bottom accurately, and save myself money in pumping, and in subsequent leakage, and in toe fill; or whether I build a crib that does not fit the bottom, and spend a lot of money in filling in front of it, and possibly spend a lot of money in pumping it out afterwards.

Q.—But, do you rely upon the cribs, and what is inside the cribs, to hold back the water, or do you rely upon them as something against which you can put an impervious sheathing?

A.—We try to make our cribs fit the bottom as accurately as we can.

Q.—Will you not please answer my question ? You have said you try to make the cribs fit the bottom. We all know that. We have had it half a dozen times. I am now asking you something else. Do you rely upon the cribs to make an impervious wall, or do you rely upon the cribs as a background against which you nail sheathing, and toe fill, to make an impervious wall ?

A.—We rely on the sheathing primarily to give us an impervious wall, and wherever the sheathing is defective, or does not fit the bottom, we have to put toe fill to correct the difficulty.

Q.—You put your cribs in to have something that will offer sufficient resistance to hold back the water after you have made your impervious wall?

A.—Not entirely, because we rely on the cribs to form a straight wall against which we lay the sheathing ; and they subsequently act as buttresses, let us say, to hold back the water.

Q.—They have to be sufficiently well loaded to hold back the head of the water behind the sheathing?

A.—Yes, that is correct.

Q.—When you find from the actual operation that you have a set of cribs that have served that purpose — that have, with the sheathing and the toe fill, and so on, held back the water— they have served the purpose for which they were intended?

A.—If the cribs, and the sheathing, and the toe fill—in other words, the cofferdam as a whole — hold back the water, the cofferdam has obviously performed the function for which it was built.

Q.—Is not the function for which the cribs were there to prevent the whole cofferdam from being shoved downstream ?

A.—As I have said, the cribs are put in, first, to give something against which a wall of sheathing can be built. The sheathing is usually put in in a manner to be as tight as possible. To overcome, let us call them, defects — and there are inevitably defects — in the sheathing, you have to put in a certain amount of toe fill. But we like to get away with as little toe fill as we can, because it usually involves a big delay, and a lot of uncertainties in connection with operating the work.

Q.—The wall against which you are going to put your sheathing has to be the kind of wall that will not move when the head of water comes against it?

A.—That is correct.

Q.—I presume there is some difference between placing cribs in still water and placing cribs in a current of six miles an hour or more?

A.—It is a good deal easier to place them in still water than it is in running water.

Q.—And, water running at the rate of six miles an hour is pretty swift water, is it not?

A.—Yes, it is quite swift.

Q.—It would exert a considerable pressure against a crib of, say, 28 x 30 feet ?

A.—Yes.

Q.—When planning to put cribs into water as swift as that is it not usual to build them upstream, and float them down ?

A.—Yes, that is correct.

Q.—And when they get down to the place where they are intended to be, you sink them by loading them with rock?

A.—Yes.

Q.—If there happen to be spaces between them, those spaces have to be filled in some way before an attempt is made to put the sheathing on the face?

A.—That is correct.

Q.—And, I suppose that may be done by putting beams across, and filling in behind them?

Witness:—You mean horizontal beams?

Counsel:—Yes.

A.—You would use some kind of a vertical member unless your joint was very wide. If it was very wide you would probably use horizontal beams.

Q.—And, you would put something behind it, as support?

A.—Yes, something behind it to make it reasonably water-tight.

Q.—Something on the face of it to make it water-tight, but something behind it — probably rock to incorporate it with the cribs?

A.—Something behind it to break the flow sufficiently so that you can put your sheathing on in front.

Q.—Was that one of the purposes for which the rock is put in the cribs?

A.—We are not speaking of the rock in the cribs. You were speaking of closing the joint between the cribs.

Q.—But, if that is required for the joint, I presume it is required for the crib as well?

Witness:—You mean that we would have to have the crib itself tight — close faced?

Counsel:—Yes.

A.—You have to cut the flow down. Assuming you are going to scribe your sheathing to the bottom, you must cut your flow down to a point where a diver can work without being drawn into the crib.

Q.—In your view, you should have a close jointed face on those cribs?

A.—That would depend entirely on the depth of water.

Q.—If you had a depth varying from 25 to 15 feet?

A.—When you get 25 feet, unless your cribs were very broad you would probably have to have a close faced crib to give proper working conditions for a diver; or, you could have your crib openfaced, and you could put your sheathing down a certain distance and use that to protect the diver.

Q.—What kind of sheathing have you had in mind in the course of this examination?

A.—Sheathing for this purpose is made either in the form of a lapped joint or in the form of what is called a tongued and grooved joint.

Q.—What would you think of Wakefield piling for a job of this kind?

A.—It would be all right.

Q.—It would not be apt to deflect very much, would it, unless there was considerable leverage left?

A.—It all depends on the relative thickness of the sheathing, and the length of the lever arm.

Q.—Say, three two inch planks bolted together?

A.—Three two inch planks bolted together would give a fairly stiff sheathing.

Q.—With the use of Wakefield piling could the "V" develop about the middle of the river without there being any joints loose enough to be of consequence?

A.—Yes. That "V" may develop in this way: the joints at the bottom must be made up by a diver, who is working largely by sense of touch because he is in the dark, and he is hampered by his diving suit, and perhaps by mitts. The joints on the top are made by a workman who is working in the air, without all this gear. The man working under the better conditions will probably get his joints a little tighter than the man working down below. This difference will accumulate ,and result in a "V" in the centre.

Q.—Without there being at any one point anything that would be sufficient to make a leak through Wakefield piling?

A.—Without developing any serious trouble.

Q.—If there were openings of any kind through which the

water could pass between or through those cribs, and logs came down, it would be natural for them to be sucked in, would it not?

A.—Yes.

Q.—If the cribs were placed on a loose bottom, in a stream having a current of six miles an hour, would it be possible for that bottom to scour out before the sheathing was placed, to a sufficient extent that logs might be caught in there?

Witness:—You mean for the bottom to scour out under the cribs?

Counsel:—Yes.

A.—Yes, that will happen if the bottom is loose.

Q.—What size or weight orange-peel bucket have you in mind in giving your testimony here today?

Witness:—In regard to its use for excavation, or for taking out logs?

Counsel:—For excavating purposes.

A.—I would have in mind a bucket or from one to two yards capacity.

Q.—I presume before determining what equipment you were going to use on a job you would like to look the job over, would you not?

A.—Yes.

Q.—And I presume you would also take the transportation problems into consideration?

A.—Yes, you would have to take that into account.

Q.—And that would affect the cost of your equipment on the site?

Witness:—Transportation problems?

Counsel:—Yes.

A.—Yes.

Q.—What size steamshovel would it be practicable to use for excavating hardpan?

A.—About one yard.

Q.—Would such a shovel excavate hardpan without blasting?

A.—Well, there are all degrees of hardpan.

R. E. C. CHADWICK (for Defendant) Cross-examination.

Q.—That is also something you would want to look at?

A.—What I was going to say was this : a one yard shovel would excavate any ordinary hardpan.

Q.—Without blasting?

A.—Without blasting, yes.

Q.—You know, I presume, in a general way, where the Cedar Rapids is on the Lièvre River?

A.—In a general way, yes.

Q.—Assuming the transportation to be 50 miles from the railway in one direction, and 30 miles from the railway in another, can you give me an estimate of what would be the cost of getting the steamshovel in and out ?

A.—I would not want to guess that. I would have to make some figures on it, or give some thought to it.

Q.—I suppose I could not get any information from you as to the sufficiency of the bridges on those highways to get the steamshovel through?

A.—I presume those small bridges would require to have some timbers across them to strenghthen them up in some way.

Q.—All that is something which you would have to calculate before you would venture to express an opinion as to what might be the cost of getting the steam-shovel in and out?

A.—Yes : you would have to give consideration to the bridges. Of course, that would not apply only to a steam-shovel. You have other plant to take in.

Q.—But, a steam-shovel is of such weight that you would have to give those things consideration ?

A.—My experience has been this : in building a structure of this kind, where you have to cross the bridges on those secondary roads, all the bridges have to be strengthened anyway, for your general plant.

Q.—But, the steam-shovel would be a much heavier implement, would it not, than an orange-peel bucket and derrick?

A.—Oh, yes, very much heavier.

Q.—And, the quantity of excavation for which it might be fitted would be one of the factors you would naturally consider in determining what equipment you were going to use?

A.—Yes ; both the quantity and the character of the ground.

Q.—In answer to one of Mr. Geoffrion's questions I understood you to say that if a contractor's price had been correctly estimated increases in quantities should be profitable?

A.—That is correct.

R. E. C. CHADWICK (for Defendant) Re-examination.

Q.—I presume that might be qualified by the consideration as to whether or not there would be any effect by change of climatic conditions under which some of the work had to be done?

A.—Yes, that might be the case.

Q.—Would it not also be possible that although your price for shallow excavation might be all right, if you had to go to a very considerable depth it might no longer be a fair price for the excavation to be done at the considerable depth?

A.—That would all depend upon the circumstances. I can see where you have to go to a great depth the cost may be greater.

Q.—Is it not very frequently the practice to have a certain price for the first ten feet, another price for the second ten feet, and another for the third ten feet, on rock excavation ?

A.—Not as a rule for rock excavation.

Q.—Does it apply to any kind of excavation ?

A.—It applies to earth excavation, in caissons and in small narrow spaces.

Q.—So, over-runs may or may not be profitable, according to the circumstances of each case ?

A.—That is correct.

Q.—And not merely according to the correctness, or otherwise, of your initial price? There are other factors?

A.—Generally speaking, I would say, whether they are profitable or not would depend to a great extent on your initial price; but I can readily appreciate that other factors would come into it.

Q.—I presume the extra cost for pouring concrete in winter is because of the precautions that have to be taken to prevent the mass from freezing before the concrete has set?

A.—Yes, generally speaking that is correct.

Q.—It is a problem of over-coming the low temperature?

A.—That is correct.

Q.—And, I presume the cost of doing that depends, to a certain extent, upon the cost of the fuel?

A.—Yes.

Q.—And that, in turn, depends, to a substantial extent, upon the transportation problem?

A.—Yes, that is correct.

Re-examined by Mr. Geoffrion, K.C., of counsel for Defendant.

Q.—When you have your cribs fitted to the bottom, the gaps between them bridged, and rock filled, while the result may

not be water-tight does it break the flow of the river considerably?

A.—Yes, as a rule it breaks the flow considerably.

Q.—You were asked how this Wakefield piling could stand water pressure. Did you consider that with a six mile an hour current?

A.—Of course, when the piling is put in the current ceases to exist. It then becomes purely a static pressure.

Q.—What is Wakefield piling?

A.—Wakefield piling is a composite pile made of three pieces of plank, bolted or spiked together, so that the effect is to leave the centre piece as a tongue on one side and a corresponding groove on the other side.

Q.—You said if the bottom of the river was loose, and the cribs were filled with stone, it might happen that the water might scour under the cribs and make openings. I will ask you to assume the condition of this river in its natural state: probably whatever over-burden there was over the rock had been there for ages. Suppose the cribs had been fitted to the bottom, and filled, was there much likelihood of scouring?

A.—The more accurate the fitting, the less chance of scour. If they were fitted perfectly, it is very doubtful if there would be any water flowing through there to make any scour.

Q.—And, if they are not fitted at all, but are laid on horizontal planks or logs, is the danger of scouring increased?

A.—Very much.

Q.—I am instructed that your Company tendered for this work, and was beaten by $10,000. Do you know that?

A.—I know we tendered for it, and I know we were beaten, but I do not know by how much.

Q.—You did not study the work, but somebody must have studied it for you?

A.—I personally did not visit the site at that time. We had several men up there.

Q.—And you cannot tell us whether the tender was made on the basis of bringing in a steam-shovel?

A.—I would have to look up our original figures.

Q.—You said something about an orange-peel working in frozen earth, and you stated that dynamite would be required. My learned friend cross-examined you in regard to an orange-peel of two yards capacity. What would you say about an orange-peel of two and a half tons ? Would it require dynamite to work frozen earth?

R. E. C. CHADWICK (for Defendant) Re-examination.

A.—It is rather difficult to reconcile offhand what size bucket two and one half tons is.

Q.—I am instructed it is about one and a quarter yards.

A.—That would be 5000 pounds. That would probably be a fairly light bucket, of perhaps one yard capacity. I am guessing now at the capacity, based on the weight.

Q.—My point is with regard to your remark that an orange-peel could not excavate frozen material without the use of dynamite. Does your remark apply to that sort of orange-peel?

A.—Yes. I do not think bucket of, say, one yard capacity, weighing two and a half tons, could excavate frozen material without first breaking the material up.

Q.—You stated that when one undertakes a contract like this he generally has to strengthen the bridges, steam-shovel or no steam-shovel. Apart from the orange-peel and derrick are there any other very heavy pieces in the ordinary plant required for that sort of work, which could be compared in any way with a steam-shovel?

A.—Locomotive cranes, if they are used on the work, would compare with the steam-shovel as regard weight. Large rock crushers might give a concentrated load on a bridge that would compare with that of a steam-shovel, or might even be worse than a steam-shovel.

Q.—What about boilers?

A.—Boilers are heavy.

Q.—Could a steam-shovel be sent in in sections?

A.—It could, yes, but I think you would take it in on its own tractors. The modern steam-shovel is a machine that runs on a caterpillar tractor, and it is a simple thing to strengthen a bridge to carry it.

Q.—I do not suppose you can even make an approximate estimate of how much it would cost to bring it in that sort of territory?

Witness:—To take the steam-shovel say fifty miles?

Counsel:—Yes.

A.—I would say the actual operation of taking it in would run perhaps $500.

Q.—Dealing with the question of rock excavation : I assume an experienced contractor, who prepares his tender after proper inspection, would asssume the extra rock excavation, if any, would be to a certain depth?

R. E. C. CHADWICK (for Defendant) Re-examination.

A.—Of course, you cannot make that apply to every work. If you are speaking of a dam, it would be in depth. In this sort of work it would almost inevitably be in depth.

Q.—And, his extra price should be made in that assumption ?

A.—His extra price is presumably made on the assumption that he will have to go deeper. He will have to go into the rock some distance to make a water tight joint under his dam.

Q.—In connection with the concrete, it was suggested to you that the transportation factor on the coal had to be taken into consideration. To what extent in your figure of One Dollar extra for concrete in winter have you considered that item ? Assuming the contractor has to cover the fifty or sixty miles from the railway to Cedar, through country the general character of which you know.

A.—My price of One Dollar a yard would be based on the average run of work that has better transportation facilities than that. We would have to increase the price of coal if you are going forty or fifty miles.

Q.—If you are going forty or fifty miles in this sort of country, what would be your increase on the general price?

A.—If we go forty or fifty miles, and if we have no hauling facilities, I suppose it would cost in the neighborhood of $10.00 a ton to make that haul.

My coal is assumed about $10.00, so I would have to add $10.00 a ton to my price of coal, which would add in the neighborhood of 30 cents per cubic yard to the cost of concrete.

Q.—So, 50 cents would be the outside figure?

Witness:—To add for the haul?

Counsel:—Yes.

A.—Yes, I would say 50 cents would be an outside figure.

By Mr. St. Laurent:—

Q.—How many pounds of coal are you figuring for each yard of concrete?

A.—I figured 300 tons would be used for heating 15,000 yards of concrete materials.

R. E. C. CHADWICK (for Defendant) Re-examination.

Q.—300 tons for 15,000 yards of concrete ?
A.—Yes.
Q.—That would mean about 40 pounds to the yard?
A.—Yes, it would mean 40 pounds to the yard.

By Mr. Geoffrion:—

Q.—To give the $1.30 your coal would be at $20. a ton?
A.—About $20.00, yes.

By Mr. St. Laurent:—

Q—I suppose the amount of heating you have to do depends upon the instructions you get from the supervising engineers, does it not?

A.—I think the methods used in heating concrete are pretty well standardized. I do not think one engineer could differ materially from another.

Q.—But, that is something which is under the control of the supervising engineer, is it not?

A.—Yes, in the last analysis it is under the control of the engineer.

Q.—Have you ever heard of using as much as 150 pounds of coal to a yard of concrete?

A.—I could not say as to that.

Q.—That would be something more than three and one third times as much as you figured on here ?

A.—Of course, it would depend entirely on the kind of concrete. If it was in very thin walls, or sections, you might use many times what I have given you here.

Q.—If, in fact, a quantity of coal equal to 150 pounds per cubic yard of concrete was used under the supervision of the engineer, in your opinion to what extent would that increase the cost of the winter concrete?

A.—It would certainly increase it by the cost of the increased coal that was burned.

Q.—And would not the cost of the increased coal also indicate precautions and what extra labor were involved?

A.—It might indicate anything. It might indicate an inefficient plant, for example ; or it might indicate the engineer was asking for extraordinary precautions.

Q.—And, if it were found he had required that quantity of coal, can you give me an estimate as to what it would work out at per yard ?

R. E. C. CHADWICK (for Defendant) Re-examination.

Witness:—Increasing the coal from 40 pounds to 150 pounds per yard of concrete?

Counsel:—Yes. I presume that coal would have to be handled by someone doing the firing, and so on.

A.—An increase from 40 pounds to 150 pounds gives 110 pounds of coal extra per cubic yards of concrete. Say your coal is worth $20.00 a ton : that is one cent a pound. That would give $1.10.

Q.—$1.10 for the cost of the coal?

A.—Yes.

Q.—When you had 40 cents worth of coal, you figured it at something around $1.30 per yard of concrete. If you had coal worth of $1.50 per cubic yard of concrete, what would you figure would be the actual cost ?

A.—When I had 40 cents worth of coal, I figured the extra cost of the winter concrete was $1.30.

Q.—And, if you have $1.50 worth of coal?

Witness:—150 pounds of coal?

Counsel:—Yes.

A.—That would add $1.10 to it. $1.30, plus $1.10, makes $2.40.

Q.—I know $1.30, plus $1.10 makes $2.40. Does the fact that you have 150 pounds of coal to each yard of concrete involve any expenditure for labor ?

A.—Yes, it does.

Q.—Can you tell us, as an expert, what all those elements put together work out at?

A.—I should say, in round figures, you would want to add $4.00 per ton of coal to your labor price.

Q.—Will you just tell me what it works out at, in figures?

His Lordship:—The total difference between summer and winter work, taking the total cost at 40 cents, is $1.40.

By Mr. St. Laurent:—

Q.—Would it not be something around $3.00?

Witness:—$3.00 in the total?

Counsel:—Yes.

A.—I have said we were using 150 pounds of coal to the yard. That is what we have assumed. I say it would cost about $4.00 a ton to put that into a boiler, and you would have to add $4.00 a ton to the price of your coal.

Q.—That would be about 30 cents per 150 pounds of coal?

A.—I come to about 13 cents a yard extra. I do not know whether that is right or not.

Mr. Geoffrion:—$1.40, plus $1.10, plus 30 cents, make $2.70.

Witness:—One fifth of å cent a pound. That is 30 cents per cubic yards of concrete.

By Mr. St. Laurent:—

Q.—$1.10 for the additional coal, and $1.40 you start off with?

A.—$1.30 to start out with.
$2.70 in all. We all check.

And further deponent saith not.

DEPOSITION DE JEAN C. CHAGNON

Témoin entendu de la part de la défenderesse.

Ce neuvième jour du mois de mars de l'an mil neuf cent trente-trois, a comparu Jean C. Chagnon, ingénieur civil, âgé de trente-deux ans, demeurant à St Jean d'Iberville, témoin produit de la part de la défenderesse,

Lequel, après serment prêté sur les saints Evangiles, dépose et dit

Interrogé par Me Aimé Geoffrion, c.r., procureur de la Défenderesse:—

Q.—Vous êtes ingénieur de la Province de Québec?
R.—Oui, monsieur.
Q.—Vous êtes à l'emploi de la Commission des Eaux Courantes de Québec?
R.—Oui, monsieur.

JEAN C. CHAGNON (pour la Défenderesse) Examen en chef.

Q.—La Commission des Eaux Courantes de Québec était intéressée à la surveillance et surveillait les travaux de construction dont il s'agit en cette cause au Rapide des Cèdres, et sur la Rivière de la Lièvre?

R.—Oui, monsieur.

Q.—Où la compagnie Bishop était contracteur et la compagnie Maclaren propriétaire?

R.—Oui, monsieur.

Q.—Entre quelles dates étiez-vous aux Cèdres?

R.—Je suis arrivé à Notre-Dame du Laus le onze (11) avril mil neuf cent vingt neuf (1929), et j'en suis reparti définitivement le dix (10) juin mil neuf cent trente (1930).

Q.—Vous avez pris des sondages, des niveaux dans la rivière?

R.—Oui.

Q.—Voulez-vous dire quand vous avez pris vos niveaux?

Le témoin:—Voulez-vous dire les sondages de la rivière?

L'avocat:—N'importe?

R.—Les sondages c'est après que les caissons ont été placés. Je ne pourrais pas préciser la date, mais c'est dans le mois d'août, je crois.

Q.—Les avez-vous indiqués sur le plan?

R.—Ces sondages-là ont été mis en note par M. McIntosh sur le plan. Pas les miennes.

Q.—Avez-vous vos notes ici?

R.—Non, je n'ai pas les notes de sondage. Au bureau, ces notes ont été mises au plan, mais pas un plan topographique. Dans les sections on a fait des sections à tous les vingt pieds, à l'endroit du barrage. Ces notes-là ont été mises en plan.

Par Me Saint-Laurent, C. R.:—

Q.—Est-ce que ces sections-là sont ici?

R.—Non.

Par Me Geoffrion, C. R.:—

Q.—Vous avez vos sondages sur des plans de section?

R.—Oui.

JEAN C. CHAGNON (pour la Défenderesse) Examen en chef.

Q.—Tandis qu'ici je suppose qu'ils apparaîtraient sur le plan?

R.—Oui.

La déposition du présent témoin est alors suspendue.

Et pour le moment le témoin ne dit rien de plus.

DEPOSITION DE JEAN C. CHAGNON

Pour faite suite à la partie prise par le sténographe Paul A. Cusson.

Ce neuvième jour du mois de mars de l'an mil neuf cent trente-trois, a comparu Jean C. Chagnon, ingénieur civil, âgé de trente-deux ans, demeurant à St-Jean d'Iberville, témoin déjà entendu et de nouveau rappelé de la part de la défenderesse ;

Lequel, sous le serment qu'il a déjà prêté continue comme suit son témoignage:

Par Me Geoffrion, C. R.:—

Q.—Avez-vous vos plans de section ici?
R.—Oui, à partir de 90 sud jusqu'à 180 sud.
Q.—Les sections à travers la rivière?
R.—Non, parallèles à l'axe du barrage.
Q.—Montant et descendant la rivière?
R.—Non, parallèles à l'axe du barrage, c'est-à-dire en travers de la rivière.
Q.—Du nord au sud ?
R.—Du nord au sud, oui.
Q.—Vous partez de quel point, vous dites?
R.—On part de la section plus ou moins 90 sud à 180 sud. On avait un zéro sud l'île, on comptait nos chaînages nord, à partir du zéro et nos chaînages sud à partir du zéro.
Q.—Vous me donnez une liasse de sections prises en travers la rivière et qui partent de zéro plus soixante et dix (70) sud et vont jusqu'à deux plus cinquante (2) plus (50) sud. Qu'est-ce que le zéro sud ?

JEAN C. CHAGNON (pour la Défenderesse) Examen en chef.

R.—Il y avait un point sur l'île que les ingénieurs de la compagnie Maclaren avaient établi suivant ce point de départ. Ce point était sur l'axe du barrage. On comptait les chaînages à partir du zéro vers le nord comme étant les sections nords, les chaînages nords, et à partir du zéro, vers la rivière, nos chaînages étaient comptés comme étant sud.

Q.—Voulez-vous prendre un des plans que j'avais ce matin. Prenez donc le plan B-2444?

R.—Voici la section, un point sur l'axe du barrage, l'axe du barrage va du nord vers le sud. Ici, il y a un point sur l'île, sur la ligne, sur l'axe du barrage. On compte nos chaînages à partir de ce point en allant vers le nord comme étant les chaînages nord. Et, vers le sud, comme étant les chaînages sud.

Q.—Je ne comprends pas du tout.

Par Me St. Laurent, C. R.:—

Q.—En montant et en descendant ?

R.—Cela c'était ouest et est.

Par Me Geoffrion, C. R.:—

Q.—Vos sections sont des sections qui suivent l'axe?

R.—Vous me demandiez si les sondages étaient pris à travers la rivière, oui, ces sections sont perpendiculaires à l'axe du barrage.

Q.—Les sondages que vous avez pris apparaissent sur ce plan-ci, perpendiculairement ou à angle droit, à l'axe du barrage?

R.—Oui.

Q.—Par conséquent, montant et descendant la rivière?

R.—Oui.

Par Me St. Laurent, C. R.:—

Q.—Le premier bord de la rive nord va vers

R.—Pas sur ces sections-ci que nous avons pris les sondages. Ici, on partait du bord de l'eau. On avait pris les sections jusqu'au bord de l'eau, soit 70 ou 80 sud. Ensuite, on a pris nos sondages parallèles à l'axe du barrage, mais en partant de 80 sud et en allant jusqu'à 180 ou 200.

Par Me Geoffrion, C. R.:—

Q.—Vous partez, disons, de 70 sud, est-ce la rivière?

R.—Pas encore.
Q.—La rivière commence où?
R.—A la date que nous avons pris nos sondages, ça partait de 80.
Q.—La rive sud était 80?
R.—C'est-à-dire la ligne d'eau.
Q.—Etait à 80 sud?
R.—Oui.
Q.—Maintenant, où cela finissait-il de l'autre côté?
R.—180 ou 150. Ca devait finir ici.
Q.—Vous dites que la rivière rive nord commençait approximativement à zéro plus 80 sud, et finissait approximativement, rive sud, à 1 plus 90 sud?
R.—Oui.
Q.—A la date que vous avez fait vos sondages, c'était le dix (10) juin?
R.—Pardon, les sondages ont été faits le vingt-neuf (29) août mil neuf cent vingt-neuf (1929).

Par Me Saint-Laurent, C. R.:—

Q.—Vos sections démontrent non seulement les sondages de cette date, mais démontrent les mesurages faits après que l'excavation eut été complétée pour asseoir la chaussée?
R.—Oui.

Par Me Geoffrion, C. R.:—

Q.—Sur ces sections-là, vous m'en donnez six (6), sur les six (6) sections que vous me donnez, vous indiquez d'abord par une ligne verticale l'axe de la dam, c'est cela, n'est-ce pas?
R.—Oui.
Q.—Et vous indiquez par une ligne, la ligne supérieure le niveau du fond de la rivière de votre sondage?
R.—Oui.
Q.—Et par la ligne beaucoup plus irrégulière, du moins celle que l'on voit, qui passe en dessous et qui rejoint l'autre aux deux bouts, le fond de l'excavation?
R.—Oui.
Q.—Je constate que vous avez donné six (6) feuilles, mais il y a deux sections par feuille?
R.—Oui.
Q.—Ce qui fait douze (12) sections?
R.—Oui.

Q.—Et nous avons naturellement l'échelle à côté?

R.—Oui.

Q.—L'endroit par rapport au zéro où la section a été prise est marqué sur chacun par les chiffres zéro 0 plus 90 est, intitulé "cross section" ainsi de suite, jusqu'à 1 plus 90 sud et au bas de cela, il y a 2 plus 0?

R.—Non, vous avez en bas de la section 1 plus 90 et cela c'est une autre section.

Q.—Vous donnez dans vos niveaux à chaque fois le niveau, et au-dessus du niveau comme l'énumérateur d'une fraction sera, la distance de l'endroit où le niveau a été pris, jusqu'à l'axe de la dam?

R.—Oui.

Q.—Vous dites que ces niveaux ont été pris par vous, vous dites qu'ils ont été approuvés par Reiffenstein?

R.—Oui. Après avoir fait la mise en plan j'ai comparé les sections avec M. Reiffenstein, ensuite je lui ai fait signer les sections comme étant conformes.

Par Me Saint-Laurent, C. R.:—

Q.—Ils s'accordaient pratiquement?

R.—Oui, c'était la même chose, pratiquement la même chose.

Par Me Geoffrion, C. R.:—

Q.—Je ne sais pas si vous êtes capable, pour simplifier notre travail de nous dire si vos sondages sont correctement représentés sur cet exhibit D-10 déjà produit?

R.—J'en ai comparé quelques-uns ce midi, ils étaient exacts, je ne les ai pas tous comparés, il y aurait moyen de les comparer avec les autres.

Q.—Vous sauveriez du temps, si, à l'ajournement vous faisiez la comparaison?

R.—Oui, j'en ai comparé trois ce midi, c'était exactement la même chose.

Q.—Dans quelle condition étaient les travaux quand vous avez pris ces sondages-là. Où en étaient les travaux?

R.—Tous les piliers et les déversoirs, excepté les déversoirs dans le canal de dérivation, étaient coulés à cette date, étaient bétonnés à cette date.

Q.—Dans la rivière même?

R.—Non, sur la rive nord.

Q.—Et dans la rivière, quelle était la condition?

R.—Les batardeaux étaient en place et je crois aussi que les palplanches étaient en place dans le temps. Seulement, le batardeau n'était pas étanche à ce temps-là. Il y avait un courant, pas très considérable mais il y avait un courant tout de même entre les batardeaux, entre les batardeaux amont et batardeaux aval.

Q.—Avez-vous pris plus tard encore des niveaux du lit de la rivière lorsque l'eau a été arrêtée, enlevée?

R.—Non, pas du lit de la rivière, les niveaux que nous avons pris ç'a été après l'excavation. Quand la terre dans le fond de la rivière a été enlevée, on a pris des sections pour avoir la surface du roc, et quand l'excavation a été finie, nous avons pris les niveaux pour avoir l'excavation finale.

Q.—Vous avez parlé de niveaux de la surface du roc?

R.—De niveaux de la surface du roc.

Q.—Les avez-vous?

R.—Ils sont montrés sur ce plan-là.

Q.—Quand avez-vous fait ces niveaux-là?

R.—Ce doit être dans le mois de décembre. On en a pris quelques-uns dans le mois de novembre après que l'eau a été suffisamment baissé et que l'excavation de terre eut été complétée. Ensuite, quand l'excavation de terre a été complétée partout, on a pris le reste des points.

Q.—Voulez-vous produire alors le plan des sections dont nous venons de parler, comme pièce D-38, composé de six feuilles?

R.—Oui.

Q.—Voulez-vous prendre connaissance de ce plan que je vous montre qui est signé du nom de Lefebvre, ingénieur en chef, par J. C. C.. J. C. C. c'est vous ?

R.—Oui, monsieur.

Q.—Et nous dire si c'est un plan que vous avez préparé pour lequel vous avez fait les observations, mesures et sondages voulus?

R.—Oui.

Q.—Il est exact?

R.—Il est exact.

Q.—Ce plan nous donne d'abord du côté gauche mis en travers, les niveaux du "sheet piling"?

R.—Oui.

Q.—Qui ont été placés là?

R.—Oui.

Q.—Il indique aussi sous le nom de "back fill" le niveau auquel le remplissage atteignait le long du "sheet piling"?

R.—Oui, le long du "sheet piling"

Q.—Vous avez d'abord le dessin de ce "sheet piling" palplanche, portant en entête les mots "before November 9th., 1929", à gauche, et "November 9th to 15th 1929", à droite. Cela veut dire que les palplanches avaient été placées dans la partie à gauche avant cette date-là?

R.—Oui.

Q.—Et les autres après?

R.—Oui.

Q.—Entre le neuf (9) et le quinze (15)?

R.—Entre le neuf (9) et le quinze (15).

Q.—Vous avez les numéros des palplanches et la profondeur où elles vont?

R.—Oui.

Q.—Cela, qu'est-ce que c'est?

R.—Le niveau de l'eau.

Q.—Maintenant, en bas tout à fait, ce sont les palplanches intérieures ?

R.—Les palplanches placées à l'aval des batardeaux.

Q.—Les palplanches que vous montrez en haut à gauche du plan qui apparaissent sont des palplanches d'acier marquées "A""A" sur le plan de surface ?

R.—Oui.

Q.—Et les palplanches marquées "B""B" sur le plan de surface, celles en aval apparaissent au bas du plan ou à droite?

R.—Oui.

Q.—Quant au plan lui-même, vous avez ici un plan des deux batardeaux de l'île, du canal de dérivation et de la digue. La digue n'était pas encore construite dans ce temps-là?

R.—C'est-à-dire que la digue était construite dans la partie nord.

Q.—La digue était en voie de construction ?

R.—La digue était en voie de construction.

Q.—Et les batardeaux étaient construits?

R.—Les batardeaux étaient construits.

Q.—Le trente (30) avril mil neuf cent trente-deux (1932), est-ce la date ?

R.—Oui, ce plan a été fait le trente (30) avril mil neuf cent trente-deux (1932), j'en avais un autre antérieur à celui-ci, le vingt-neuf (29) octobre mil neuf cent vingt-neuf (1929). Seulement, sur lequel j'avais montré simplement la location des piliers, des batardeaux.

Q.—L'avez-vous celui-là?

R.—Oui, je l'ai ici.

JEAN C. CHAGNON (pour la Défenderesse) Examen en chef.

Q.—Voulez-vous produire d'abord le plan que vous venez de me montrer comme D-39?

R.—Oui.

Q.—Maintenant, vous me montrez un autre plan d'octobre mil neuf cent vingt-neuf (1929)?

R.—D'octobre mil neuf cent vingt-neuf (1929).

Q.—Celui-ci donne d'abord la position des batardeaux d'amont, tels qu'ils étaient à cette date-là?

R.—Oui.

Q.—Il n'indique pas de batardeaux intérieurs?

R.—Non. Ces données-là ont été relevées sur le terrain les trente (30) juillet et vingt-six (26) septembre, et j'ai fait ce plan, d'après les données du trente (30) juillet et du vingt-six (26) septembre.

Q.—Les données que ce plan reproduit avaient été retenues avant que vous placiez le dernier batardeau qui a été mis en haut du batardeau qui était descendu trop bas?

R.—Oui.

Q.—Vous avez aussi les palplanches en bois, elles son indiquées là?

R.—Oui.

Q.—Vous avez la ligne de la dam, les rives, les batardeaux d'en bas étaient-ils placés aussi?

R.—Oui, ils étaient placés. Les palplanches étaient placées également.

Q.—Que veut dire le mot "flume"?

R.—C'est une conduite ouverte qui a été construite dans le but de prendre une partie de l'eau qui traversait.

Q.—C'est le "flume" dont on a parlé plusieurs fois?

R.—Oui.

Q.—Vous avez ici une section du "flume"?

R.—Oui.

Q.—Voulez-vous produire ce plan, s'il vous plaît comme D-40?

R.—Oui, monsieur.

(La présente déposition est alors ajournée au 10 mars courant à 10.30 de l'avant-midi).

Et pour le moment le déposant ne dit rien de plus.

DEPOSITION DE JEAN C. CHAGNON (suite)

Témoin produit de la part de la défenderesse.

L'an mil neuf cent trente-trois, ce dixième jour du mois de mars, a comparu Jean C. Chagnon, ingénieur civil, âgé de trente-deux ans, demeurant à St-Jean d'Iberville, témoin déjà entendu et de nouveau rappelé de la part de la défenderesse ;

Lequel, sous le serment qu'il a déjà prêté continue comme suit son témoignage:

Par Me Geoffrion, C. R.:—

Q.—M. O'Shea a produit un plan comme D-10, mais M. McIntosh est celui qui a dit qu'il avait pris sur vos notes. Ce plan indique le "crib" No 1, — C'est cela qui m'interesse actuellement, — dans une position légèrement différente de la position où il est montré sur le plan que j'ai produit comme D-40. Etes-vous capable de jeter quelque lumière sur cela?

R.—Le trente (30) juillet, j'ai fait un relevé du batardeau d'amont, en établissant sur le terrain une ligne parallèle à la ligne de base, à soixante et dix-neuf (79) pieds de la ligne de base, et j'ai relevé quelques points sur les caissons. M. Dubreuil m'avait demandé de lui faire un plan pour lui donner une idée donnant l'allure générale du batardeau. J'ai fait un plan sur un papier, seulement ce plan n'était pas officiel dans le temps, et M. McIntosh m'a demandé s'il pourrait copier ce plan-là. Je lui ai laissé copier. Je crois que M. Reiffenstein a copié le même plan également.

Plus tard, le vingt-six (26) septembre, je suis allé sur le terrain et j'ai produit une autre ligne à quarante-sept (47) pieds en amont de la ligne de base, et j'ai relevé d'autres points des caissons. Mes caissons se trouvaient alors relevés avec une ligne en amont et une ligne en aval. Et avec ces deux relevés-là je suis absolument certain de la position de mes caissons.

Par Me Saint-Laurent, C. R.:—

Q.—Sur D-40?

R.—Sur D-40. Maintenant, il se peut que le caisson sur le plan que j'ai prêté à M. McIntosh et à M. Reiffenstein, il se peut que le caisson No 1 n'était pas placé exactement de la même façon.

JEAN C. CHAGNON (pour la Défenderesse) Contre-interrogé.

Par Me Geoffrion, C. R.:—

Q.—Avez-vous eu le temps de vérifier les mesures sur D-10, si elles correspondaient aux mesures de sections?

R.—Non, je suis arrivé hier au bureau, je n'ai pas eu le temps.

Contre-interrogé par Me Saint-Laurent, C. R., procureur des demandeurs:—

Q.—Vous avez expliqué que ces sections produites comme D-38 sont des sections prises en longueur de la rivière?

R.—Oui.

Q.—Et représentent la surface de l'endroit où on a fait de l'excavation pour placer les fondations de la chaussée?

R.—Oui.

Q.—Aux endroits où il y a seulement deux lignes dois-je comprendre que vous affirmez qu'il n'y avait rien au-dessous du roc?

R.—Exactement.

Q.—Que le roc était nu?

R.—Le roc était nu.

Q.—Le roc était nu à quelle date?

R.—Ces sections-là à la surface du terrain ont été prises le vingt-neuf (29) août.

Q.—Le vingt-neuf (29) août vous avez fait des sondages ?

R.—Nous avons fait des sondages.

Q.—Il y avait encore de l'eau?

R.—Il y avait encore de l'eau.

Q.—Et lorsque vous avez plus tard préparé vos sections, vous vous êtes servi de ces sondages pour placer la ligne supérieure sur vos sections?

R.—Oui.

Q.—Et vous vous êtes servi des mesurages que vous avez faits du fond de la tranchée excavée pour indiquer la ligne inférieure?

R.—Oui.

Q.—Sur d'autres de ces sections je vois qu'il y a trois lignes brisées, superposées. Dois-je comprendre que celle du milieu est la surface du roc telle que vous l'avez mesurée, après l'assèchement et après l'enlèvement de la quantité de matériel qu'il pouvait y avoir au-dessus du roc?

R.—Oui.

JEAN C. CHAGNON (pour la Défenderesse) Contre-interrogé.

Q.—Alors, sur la feuille D-27-32-40, la section supérieure montre une ligne de surface du lit de la rivière, tel que vous l'avez trouvé, par vos sondages, et une autre ligne qui montre la surface du roc tel que vous l'avez mesurée après l'assèchement et l'enlèvement de ce qu'il y avait au-dessus du roc, et la troisième ligne le fond de la tranchée excavée?

R.—Exactement.

Q.—Sur D-27-32-39 et D-27-32-38 et D-27-32-37, c'est la même chose?

R.—La même chose.

Q.—Sur D-10, est-ce qu'il ne vous paraît pas y avoir plus de sondages indiqués que sur vos sections? Est-ce que l'espace couvert par les sondages ne vous paraît pas plus long dans le sens du courant de la rivière que les indications sur le plan?

R.—Les indications sur le plan sont les indications à l'endroit du barrage.

Q.—Mais, il paraît y en avoir d'autres que cela sur l'exhibit D-10?

R.—C'est possible. Il y aurait moyen de vérifier cela aussi. Sur ces sections-là, les sections ne sont pas toutes de la même longueur. J'en ai à cinquante-deux (52) pieds, à quarante-cinq (45) pieds.

Q.—Il faudrait examiner chaque chiffre pour voir s'ils se trouvent sur vos sections ou non?

R.—Oui.

Q.—Vous-même n'avez-vous pas fait du travail dans la préparation de ce plan-là?

R.—Non.

Q.—Cela paraît être quelquechose pris sur peut-être certaines pièces que vous aviez préparées, mais quant à l'exactitude même de la reproduction, vous n'avez pas suffisamment vérifié pour dire quoi que ce soit?

R.—Non.

Q.—Quant à la position apparente du "crib" No. 1, vous avez expliqué qu'ayant pris seulement certains relevés pour un croquis, pour M. Dubreuil, il est bien possible que vous n'ayez pas impliqué exactement cela sur votre croquis, et vous ne savez pas si on l'a copié exactement non plus sur D-10?

R.—Non.

Q.—Ce que vous savez c'est que lorsque vous avez vérifié plus spécialement au mois de septembre, vous avez mis sur D-40 exactement la position de ce "crib" No. 1?

R.—Oui.

JEAN C. CHAGNON (pour la Défenderesse) Contre-interrogé.

Q.—Est-ce que sur D-40 il n'y a pas une indication que ce qui est haché démontre ce qui était placé à la date du vingt-six (26) juillet?

R.—Vous avez vu cela sur un autre plan, le plan du bateau lui-même.

Q.—Lorsque vous avez vérifié de nouveau, au mois de septembre, dois-je comprendre que vous avez indiqué seulement les "cribs" qui avaient été déjà placés le vingt-six (26) juillet?

R.—Oui, j'ai indiqué les caissons seulement.

Q.—Et vous n'avez pas indiqué les additions aux caissons qui avaient été construites sur place, dans D-40?

R.—Non. J'ai indiqué ce caisson, un petit caisson qui était sur la culée nord. Ce caisson était construit pour établir un "derrick".

Par Me Geoffrion, C. R.:—

Q.—Quand a-t-il été construit?

R.—C'est dans les mois, d'août et septembre, je crois.

Q.—C'est-à-dire le petit caisson?

R.—Ce petit caisson-là ici.

Q.—Qui se trouve juste au nord du "flume"?

R.—Juste au nord du 'flume", oui. Ce caisson a été fait pour établir un "derrick", il a été fait sur la culée.

Par Me Saint-Laurent, C. R.:—

Q.—La culée se trouve en dessous?

R.—Oui.

Q.—Et vous ne voulez pas dire que tout ce qui est indiqué comme caisson vis-à-vis la lettre "A" supérieure ait été construit en août et septembre? C'a été des ajoutés faits au-dessus du caisson?

R.—Au-dessus du caisson, oui.

Q.—Se servant du caisson ou du pilier de la rive nord comme fondation?

R.—Justement.

Q.—Et sur D-39, vous avez indiqué par des lignes parallèles des pièces de bois, et par des petits ronds, je suppose, le remplissage, le roc qui servait de remplissage?

R.—Oui.

Q.—Est-ce qu'il y avait plus de pièces de bois que ce que nous voyons ? Est-ce une reproduction exacte, une indication descriptive?

JEAN C. CHAGNON (pour la Défenderesse) Contre-interrogé.

R.—Non. C'est une indication.

Q.—Pour montrer qu'il y avait des pièces de bois qui courraient depuis le caisson jusqu'à la face?

R.—On ne voit que les pièces de bois supérieures. Il y en avait en dessous qu'on ne voit pas ici.

Q.—Ce qui est indiqué comme pièce de bois, c'est plutôt descriptif qu'exactement reproduit, c'est pour indiquer d'une façon générale que c'était construit à la fois en pièces de bois avec remplissage de cailloux?

R.—Oui. Je me souviens que j'ai relevé quelques pièces de bois.

Q.—Pour le travail que vous aviez à faire, il n'était pas intéressant de les indiquer avec certitude?

R.—Cela n'avait aucune importance.

Q.—Quand à l'exhibit D-40, il y avait depuis de bonne heure le printemps, n'est-ce pas, un pilier sur la rive nord qui avait à peu près l'étendue de ce qui pourrait être deux morceaux séparés sur D-40?

R.—Oui.

Q.—Et vous avez fait la distinction parce que le bout rapproché de l'eau a été surélevé par une construction additionnelle pour placer un "derrick"?

R.—Exactement.

Q.—Ce qui est indiqué par les chiffres 1, 2, 3, 4 et reproduit en bas, c'est un "flume"?

R.—Oui.

Q.—Est-ce qu'on ne s'en servait pas pour mesurer ou apprécier la quantité d'eau qui passait? Est-ce qu'on n'avait pas organisé cela pour mesurer la quantité d'eau?

R.—C'était plutôt pour prendre une partie de l'eau qui passait à travers le caissonnage.

Q.—Est-ce qu'on n'avait pas aménagé de façon à mesurer, à peu près, quelle quantité d'eau y passait?

R.—Cela, je ne saurais le dire.

Q.—Sur cet exhibit D-40, je vois qu'il y a des lignes blanches à l'entrée de ce "flume", est-ce que le "flume" s'étendait seulement jusqu'à la face d'amont du pilier nord et du caisson No 1?

R.—Oui.

Q.—Et le reste c'est l'indication présumée de la provenance de l'eau?

R.—Oui. On avait aménagé aussi un endroit où l'eau s'accumulait avant d'entrer dans le "flume", ici, ces lignes-là ce

n'est rien de très exact, mais simplement pour indiquer que l'eau venait à peu près de cet endroit-là.

Par Me Geoffrion, C. R.:—

Q.—Sur votre plan D-10, la ligne de la grève nord n'est pas indiquée, tandis qu'elle l'est sur D-39, n'est-ce pas, approximativement du moins?

R.—Oui. Cette ligne n'est pas très exacte.

Q.—D-39, cela varie avec la profondeur de l'eau?

R.—Exactement.

Q.—De ce côté-là, je comprends que le bord est très à pic?

R.—Oui.

Q.—Alors, la variance en serait faite?

R.—Oui.

Q.—Si j'examine la ligne de grève sur D-39 et cherche à la placer approximativement sur D-40, le petit batardeau que vous dites avoir été construit ou exhaussé juste au nord du "flume", empiètrait un peu sur la rivière?

R.—Oui.

Q.—Maintenant, pouvez-vous dire s'il a été simplement exhaussé ou s'il n'a pas été élargi du côté de la rivière aussi ? Ce que je veux savoir c'est si originairement la distance entre le côté nord du "crib" No. 1. et le batardeau d'appui sur la rive nord était plus large que la largeur de ce "flume"-là?

R.—Autant que je me souviens, c'est tel qu'il est indiqué ici, il n'allait pas plus loin.

Q.—Mais, allait-il moins loin?

R.—Non, il effleurait avec le premier caisson.

Q.—La largeur entre les caissons d'aboutissant et le caisson placé No 1. dans la rivière a été la largeur du "flume" à peu près?

R.—Oui, j'ai vérifié la distance entre la culée et le caisson no 1. quand j'ai pris les dimensions de la largeur du "flume" à cet endroit.

Q.—Quand était-ce?

R.—Cela devait être à la fin d'octobre.

Q.—Quelle était la largeur alors?

R.—Ici, dans la section "AA"?

Q.—Je veux savoir la distance?

R.—J'ai trois pieds six (3.6) à l'intérieur. Ca mènerait à quatre pieds et demi (4½).

JEAN C. CHAGNON (pour la Défenderesse) Contre-interrogé.

Par Me Saint-Laurent, C. R.:—

Q.—Quatre pieds et demi à l'endroit le plus large, c'est-à-dire à la face d'amont et un peu moins que quatre pieds et demi à l'endroit le plus étroit, à la face aval?

R.—Oui. Bien, voyez-vous, j'ai ici six pouces, cette largeur est trois pieds et demi à l'intérieur du "flume". Ensuite, six pouces de chaque côté cela fait de suite quatre pieds et demi. La distance exacte cela peut être quatre pieds et demi, cinq pieds. Pour moi, cela n'avait pas d'importance.

Q.—Mais, au mois de septembre, lorsque vous avez vérifié par une ligne d'avant et une ligne d'aval la position des caissons, il y avait déjà les travaux additionnels qui apparaissent sur D-39, ils existaient?

R.—Le remplissage était commencé ici, c'est-à-dire entre les palplanches et les caissons.

Q.—Les palplanches et le bois étaient déjà posés?

R.—Oui.

Q.—Et vous ne l'avez pas indiqué sur D-40 parce que vous vouliez montrer la position des caissons au mois de juillet ?

R.—Oui. J'ai indiqué les palplanches seulement je n'ai pas indiqué le remplissage.

Par Me Geoffrion, C. R.:—

Q.—Vous vous rappelez très bien de l'alignement exact en juillet du côté de la rivière avant les travaux d'exhaussement pour le "derrick", du bord du caisson qui est sur la rive nord ? Je vous dis cela parce que mes adversaires ont produit un plan qui indiquerait que ce caisson-là n'avait pas un côté droit en montant la rivière, mais allait en s'évasant de manière à ce que l'ouverture n'était que de cinq (5) pieds plus bas, mais était près de dix (10) pieds en haut. Etes-vous capable de dire si ce plan de leur part est correct ou non. Je parle toujours en juillet, si vos mesures de juillet vous permettent de nous dire si le plan que mes savants amis ont produit comme P-37 et qui indique une ouverture allant un peu en rétrécissant et descendant la rivière entre le "crib No. 1" et le "crib" de la rive nord, était exact ou inexact comme description des lieux en juillet ?

R.—Cela, je ne saurais le dire.

Et le déposant ne dit rien de plus.

In the Privy Council.

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No. 72 of 1936.

ON APPEAL

FROM THE COURT OF KING'S BENCH FOR THE PROVINCE OF QUEBEC

BETWEEN

WILLIAM I. BISHOP LIMITED and
THE BANK OF MONTREAL
(Plaintiffs and Cross-Appellants before Court of King's Bench) ... ... *Appellants*

AND

THE JAMES MACLAREN COMPANY LIMITED
(Defendant and Cross-Respondent before Court of King's Bench) ... ... *Respondent*

RECORD OF PROCEEDINGS.

VOLUME 4.—DEFENDANT'S EVIDENCE (CONTINUED).

BLAKE & REDDEN,
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