DOMINION OF CANADA

In the Supreme Court of Canada

(OTTAWA)

On appeal from a judgment of the Exchequer Court, for the Province of Quebec, (in appeal), District of Montreal.

BETWEEN:—

The Southern Canada Power Company Ltd.,

(Defendant in the Exchequer Court),

APPELLANT.

— VS —

His Majesty the King,

(Plaintiff in the Exchequer Court),

RESPONDENT.

APPELLANT'S FACTUM

JOSEPH MARIER, K.C.,
ALPHONSE DECARY, K.C.,
Attorneys for Appellant.

HONOURABLE J. L. RALSTON, K.C.,
Counsel.

C. A. MARCHAND, PRINTER, MONTREAL.

INDEX

DOMINION OF CANADA

In the Supreme Court of Canada

(OTTAWA)

On appeal from a judgment of the Exchequer Court, for the Province of Quebec, (in appeal), District of Montreal.

BETWEEN:—

The Southern Canada Power Company Ltd.,

(Defendant in the Exchequer Court),

APPELLANT.

— vs —

His Majesty the King,

(Plaintiff in the Exchequer Court),

RESPONDENT.

APPELLANT'S FACTUM

On the 8th day of April, 1928, a passenger train of the Canadian National Railways, proceeding from Quebec to Montreal, ran off the track as it was nearing Drummondville.

An earth embankment, just ahead of the Railway Bridge, on the St. Francis River, had been undermined and loosened by the water and the ice of the river, and the arrival of the train at that point caused what was left of the road-bed to sink, throw-

ing the train into the river. There was loss of life and considerable damage was done to the various cars and locomotive, and repairs had to be made to the road-bed and the bridge.

Indemnities were paid to the families of the deceased employees, and also to several passengers for injuries and bruises sustained.

While repairs were being made to the bridge, it was necessary for the trains to pass on another line, occasioning additional disbursements. All these damages, resulting directly or indirectly from the accident, formed a total sum of $81,000.00. This is the amount claimed in the present case.

Respondent claimed these damages from Appellant, contending that the considerable flood, which took place in the Spring of 1928, was caused by the construction of a dam in 1925, by the Appellant, at a place called Hemmings Falls, three miles up the river from the railway bridge.

According to the Respondent the erection of this dam had the effect of changing the conditions of the formation of ice in the winter in the artificial basin formed thereby upstream from the said dam, and also of changing the conditions of the movement of ice and the flow of water in the Spring.

More particularly, according to the Respondent, this dam had the effect of causing, upstream therefrom, a concentration of water and ice greater than that which would have occurred under natural conditions. This mass of water and ice is alleged to have been made to flow by a deliberate act of the Appellant in that it had dynamited the jam of ice thus formed, and had at the same time opened the sluice gates of the dam, thereby causing the sudden flow of this ice concentration, with the result that the water level at the railway bridge situated lower down was abnormally elevated.

Appellant has denied all the allegations of Respondent tending to render it responsible for the accident. Appellant has contended that the ice break-up of 1928 was due solely to natural causes, and was but the repetition of similar events which occurred in the past before the erection of this dam.

Moreover Appellant has contended that the ice break-up of 1928 was everywhere the most considerable and serious one

which ever occurred on the St. Francis River, and that it was due to natural causes and climatic conditions over which the Appellant had no control.

Appellant has specially invoked in its plea the negligence of the Respondent on two points:

(a) Because the embankment which was undermined and loosened by the water was not built and erected solidly enough to resist the pressure of the water and the ice floes.

(b) Because Respondent did not take the most elementary precautions that prudence would have dictated to prevent the accident which occurred, particularly in view of the fact than an ice break-up of unparalleled seriousness had taken place during the days preceding the accident, at Richmond, 25 miles upstream from Drummondville, where a number of superior officers of the Railway Company resided, and had knowledge of this ice break-up, and who had seen the abnormal mass of water and ice leave Richmond about 27 hours prior to the accident, which occurred at Drummondville.

Appellant further specially pleaded that the damages enumerated in sub-paragraph F of paragraph 8 could not legally be claimed from it because these constituted payments made voluntarily by Respondent without any legal or judicial obligation, and without the Appellant being called upon to intervene to have it declared whether these payments should be made or not.

Appellant moreover pleaded that the damages claimed in this action could not be claimed by Respondent, but only by the Canadian National Railways.

After a long hearing, the Exchequer Court of Canada rendered judgment finding the Appellant responsible and condemning it to pay to Respondent the full amount claimed less an amount of $600.00 which the Judge considered represented damages which were too indirect and remote.

And Appellant wishes to submit to this Court its reasons why this judgment should be reversed.

REASONS FOR THIS APPEAL

We submit at first that the action should have been dismissed as a whole, and that a correct appreciation of the evidence adduced in this case leads to the sure conclusion that the rise of the water at the railway bridge on the 8th of April 1928 was simply the result of natural causes, the repetition of exactly similar cases which often occurred in the past before the erection of the dam. Moreover the dam erected by the Appellant far from constituting an aggravation or increase of danger insofar as the Railway is concerned, is on the contrary a protection.

As regards our contention that the rise of the water level at the railway bridge in 1928 would be due solely to natural causes, we shall analyze as briefly as possible the principal points revealed by the evidence, and we believe that we are in a position to successfully demonstrate that the evidence, although contradictory on many points, confirms our contention, in spite of the fact that the burden of proof lies with the Respondent as admitted by the Judge of first instance.

That the events which took place in 1928 at the location of the railway bridge were the repetition of similar events which had often occurred in the past, we shall submit before this Court that the contention of the Appellant is supported and substantiated by uncontradicted evidence, and that this evidence alone should suffice to attribute to acts of God what took place in 1928.

That the dam erected by the Company was a protection for the railway instead of an aggravation and increase of danger, we shall submit that this contention is upheld by very serious and strong evidence, and moreover that it is self evident, if it is admitted that the ice break-up at the railway bridge in 1928 was not more serious than it had been in the past before the existence of the dam, in years when the conditions of the ice break-up all along the river were less serious than in 1928.

The second point of our argument lies in the alleged negligence of the Respondent. This negligence would be two-fold:

(a) Respondent, in our opinion, had known for a long time that the earth embankment which was broken in 1928 was not sufficiently solid to resist the pressure

of the water and ice in the event of a serious ice break-up. If we should successfully show to this Court that on several occasions in the past the railway embankment had been exposed to a similar danger and that the superior officers of the Respondent had themselves ascertained and realized the danger, we believe that we are entitled to conclude that it was Respondent's duty to immediately replace this too weak construction by other works similar to those which have been erected since 1928, and the catastrophy which occurred and the damage which were a consequence thereof, would have been avoided.

(b) Appellant has proven, without contradiction, that the ice break-up of 1928 was the most serious on record, but at Drummondville it was not a sudden and unforeseen event. The accident, as a result of which damages are claimed, occurred on the 8th of April 1928 at 4 o'clock in the afternoon. Now then since the 6th of April 1928, at Richmond, 25 miles upstream from Drummondville, the ice break-up was taking place with a force and intensity never known before. The train service was interrupted for more than 24 hours, and it was necessary to use the snow ploughs to clear the railway tracks.

We submit before this Court that the Respondent's officers, facing such a serious situation, should have foreseen that a very serious danger would result from the passage at Drummondville of the great accumulation of ice and water which had been held at Richmond, and which left Richmond in the direction of Drummondville on Saturday the eve of the accident. As no precautions were taken, and as the accident and the fall of the train in the river could have been prevented if a watchman had been placed at the bridge, this constituted serious and grave negligence, and, in any event, all the damages except those caused to the bridge and the road-bed of the railway, should be attributed directly to the negligence of Respondent.

As regards the damages mentioned in detail in sub-paragraph F of paragraph 8 of the statement of claim, to wit, the indemnities to passengers and to the families of the victims, etc., we will submit that there is no "lien de droit" on this point between the parties, that the payments made without any judgment intervening and without the Appellant being called in the

case were made as compassionate allowances, if there is no fault attached to Respondent, as Respondent contends, or else that they were simply the just punishment of its fault and negligence if the Respondent was guilty of the negligence for which we blame it.

Finally, we will submit that the present suit could not be brought by the Respondent, but by Canadian National Railways only, and before the Superior Court of the Province of Quebec.

ANALYSIS OF THE EVIDENCE AND ARGUMENT

Before examining the facts we deem it necessary to locate, as exactly as possibly in regard to the evidence and the exhibits filed, the various places which we will have to travel over and the various works of which mention will be made in the testimonies that we have to analyze.

The St. Francis Rivers flows from south to north, has its source in Aylmer Lake, and flows into the St. Lawrence River at Lake St. Peter. To follow its course, ascertain the different localities it runs through and the distance between the various points, reference can be made to the map filed as Exhibit No. 29, and to the map filed as Exhibit "B." To ascertain the difference in level along its course, reference can be made specially to the plans of the Quebec Streams Commission, filed in five distinct sections as Exhibits Z27, Z28, Z29, Z30 and Z31. We shall refer particularly to sections filed as Exhibits Z28 and Z29 as representing the localities where the events we have to consider took place.

Drummondville is situated between mile 32 and mile 33. That is where the railway bridge is situated, which was terminated at its eastern extremity by an earth embankment 20 feet in height, and approximately 75 feet in length, and then by a viaduct 25 feet in width over a public road. It is this earth embankment which gave way on the 8th of April 1928 under the pressure of the water and the ice while the water and ice rushing with violence under the viaduct undermined or at least considerably weakened the abutment terminating the embankment, and which formed one of the walls of the viaduct. That is where the accident occurred, when passenger train No. 45, proceeding from Quebec to Montreal, ran onto the viaduct and the partially demolished embankment, and plunged, in part, into the river, swollen by the flood.

At about 300 feet downstream is the bridge for vehicles, to which we shall have occasion to refer in several instances. The photographs filed as Exhibits "Z" and Z.1. clearly show these two structures.

At a distance of 1100 feet upstream from the railway bridge, there is a dam of a few feet in height only, built in 1918 by the Appellant to replace a dam of similar height, which had been erected in 1896 by the Town of Drummondville at about 50 feet upstream from the one which now exists. The photographs, Exhibits Y, Z and Z1 clearly show this particular structure, and also show part of the intake canal which brings the water to the power house situated downstream.

At 2½ miles upstream in the river is located the dam called the Hemmings Falls Dam, the one which, it is claimed, was the cause of the accident, which occurred on the 8th of April 1928.

As we will often refer to this dam, it might be useful to refer to the plans and photographs, filed as Exhibits 18 and 20, which clearly show all the works executed at that place in the St. Francis River. Let us add a short description of these works, as follows:

On the north shore of the river there is a wing wall, 420 feet in length at elevation 324, in 1928, and now raised to 327. Then there is the power house section, occupying a space of 250 feet in length; then there are the sluice gates, numbering four, each 50 feet in width, with, to separate and hold them, concrete piers, each 15 feet in width. The sills of the sluice gates are at elevation 299; then there is the section of the dam proper, consisting of a concrete wall called the spillway, 507 feet in length and reaching a height of 50 feet at certain points; the whole is terminated on the south shore by a concrete wing wall, 300 feet in length followed by a natural elevation of the ground of an equal length, and by an earthfill dam, 4200 feet in length. This latter work is built parallel to the shore of the river at a place where the bank of the river was too low to hold the waters which the dam was to shore.

The crest of the spillway is at elevation 314; the concrete wing wall on the south side is at elevation 324, and the earthfill is at elevation 327. On the spillway are generally used flashboards, approximately seven feet in height, to hold the water at a level varying between elevation 317 and 318.

In its natural state, at low water, according to plan, Exhibit Z28, the elevation of the surface of the water was at 265 at the foot of the Hemmings Rapids, slightly lower than the present site of the dam, and at 309 a mile upstream at the head of the Rapid, where there is in the river, across its full width, the usual rocky formation found at the head of rapids, a rise of the river-bed called "hogback" by Engineers. This rise, or hogback, is three feet higher than the bed of the river at half a mile upstream.

Thus, there was a pronounced rapid at the place called Hemmings Falls, and it is this rapid which was utilized for the establishment of a Hydro-Electric Plant.

At half a mile upstream from the head of the rapid or hogback, is the farm formerly owned by Ernest Labonté, and appearing in the name of Alfred Labonté, No. 97, Township of Wickham, on the plan, Exhibit 35.

In 1917, the Quebec Streams Commission established at that spot an observation station with a hydrometric scale to measure the height of the water daily and to figure out the flow of the river, the area of that section having been previously measured.

According to Mr. Olivier Lefebvre, Chief Engineer of the Quebec Streams Commission, this was a suitable spot for that kind of observations. In fact, this point was situated in a basin of perfectly calm water, since for 3½ miles from the head of the rapid to mile 40, opposite the Dauphinais property, there was a difference in level of three or four inches, as shown by levels taken in 1917. This can be ascertained on plan Z28, and plan 35 indicates the properties situated along this basin of calm water. We now come to the property formerly owned by Napoleon Dauphinais, indicated on plan 35 by the cadastral Numbers 73, 72, 70 and 69.

That is the spot referred to as the head of the basin of calm water, called "Labonté-Dauphinais" in the testimonies. It is seen on the plans that the river at that point and in its natural state was close to 2000 feet in width and that numerous islands, which are to-day completely submerged covered the basin. Upstream from the island, which is given various names in the testimonies, but which is indicated on the plans as being cadastral No. 71, was encountered another rapid that the witnesses

have called the "Dauphinais Rapid". For a distance of less than one mile the change in level (Plan Z28) was approximately 12 feet. A less pronounced change of level is found upstream from this rapid.

This is the territory that may be effected by the works made by the Appellant in 1924 and 1928, in erecting the dam at Hemmings Falls. In this basin of calm water, situated between the head of the rapid and the Dauphinais property, the water is now at elevation 318, while it used to be in its natural state at 309.5, that is to say, the level of the water has been raised approximately 8½ feet in this basin. It goes without saying that the water in the artificial basin now situated on the stretch of the river where the Hemmings Rapid formerly flowed is now at the same level, thus making a basin of approximately 5 miles, instead of the natural basin of 3½. On the other hand, the Dauphinais Rapid is almost totally submerged and the Hemmings Rapid has completely disappeared.

We shall more readily realize the importance of these two facts when we come to the study of the formation of the ice in the winter, and especially of the frazil, which forms in rapids only and causes such serious inconvenience in rivers.

To end our description of that part of the territory, let us say that the two ice jams, which will be referred to most frequently and which are considered by Respondent as the cause of the accident in 1928, formed as follows: An ice jam first showed at the foot of Island 71, opposite the Dauphinais property, on the 6th of April 1928. This ice jam went down the river on the 7th of April 1928, in the afternoon, and stopping at the head of the rapid which formerly existed, caused the second ice jam at 1½ miles from the dam, as indicated on plan Z5, between the properties of Ludger Bergeron on the east Side, and of Ernest Dionne on the west side. It is this latter ice jam which broke up at 3 o'clock in the afternoon on the 8th of April 1928, thereby releasing an enormous quantity of water and ice and causing at the railway bridge the rise in the water level which caused the accident. This latter ice jam, according to the unanimous testimonies of the witnesses of both parties, was formed at the location indicated on plan Z5. It will appear, therefore, that this ice jam was formed on the line of that crest, or hogback, existing in the river, and to which we have hereinbefore referred.

As far as the other part of the territory, situated on the course of the St. Francis River, is concerned, we do not feel that

it is necessary at the present moment to give a detailed description thereof. We feel that it should be sufficient to indicate and locate these various points on the plan as we reach these other points, beyond the above-mentioned territory, in the study of the facts.

THE 1928 FLOW HAS BEEN CAUSED BY NATURE ONLY:

We submitted before the Exchequer Court, and we again submit before this Court, that it is impossible to establish by an analysis of the facts proven in this case that the events which took place on the occasion of the ice break-up of 1928 were brought about by other causes than the combination of natural forces.

To demonstrate this, we had recourse to a number of eye-witnesses, who told us what they had knowledge of. We also had recourse to the knowledge of Engineers of high repute, Messrs. DeGaspe Beaubien, Arthur Surveyer and Olivier Lefebvre, the latter is Chief Engineer of the Quebec Streams Commission. Moreover, the Engineers heard on behalf of the Appellant related their conclusions as result of their studies and of their experience. We further inserted into the record the facts officially ascertained by the Quebec Streams Commission whenever these facts could throw some light on the problems we had to face.

We wish to submit right now that in our opinion the Honourable Judge of first instance committed a grave mistake in rejecting as a whole, the evidence adduced by our experts in declaring that the Respondent's experts had on their side submitted contradictory theories, and the solution of this case was to be sought in the evidence of the other witnesses only. That these experts could have entertained different opinions, we are prepared to admit. We have to face a very serious problem involving certain precise data and known principles, but where it is impossible to ascertain in an absolute way numerous facts and elements. That there should be difference of opinion is not more surprising than differences in opinion occurring between lawyers dealing with a legal problem. But we submit that it is not fair and just to put aside as a whole their opinions without carefullly weighing same to determine which opinion is more in conformity with the recognized principles of science and the facts ascertained, because the other witnesses, who have neither the science nor the knowledge of the experts, cannot explain the facts without themselves giving numerous opinions which cannot rest on any serious basis.

Let us say right now that the principal witnesses on which the Judge of first instance relies, are witnesses who are interested in establishing the responsibility of the Appellant as they themselves have before the Courts of the Province of Quebec, pending cases wherein they claim from the Appellant damages varying from $4,500.00 for Walter Labonté-, to $43,000.00 in the case of the witness Alexandre Mercure.

Since 1927, these gentlemen have formed a sort of syndicate, to carry their cases before the courts. While Napoleon Dauphinais and Ernest Labonté were pressing their cases before the courts, with the result that their cases were finally dismissed by the Court of Appeal of the Province of Quebec, the other were helping with their money, their testimonies and their opinions. It is not surprising that in this long battle, with so much at stake for each of them, their point of view should have gradually been affected by their interest, and that they should have finally come to accept as facts their own opinions or those which they often heard expressed. In his judgment (Vol. 6, page 1079), the Judge of first instance, whilst declaring that he relies mainly on the evidence of Mercure, admits his interest, but says: "I consider Mercure to be honest and in good faith." We cannot accept this statement, and without even discussing the question of good faith, we merely say: The interest you have in the result of this case naturally makes you a prejudiced witness, and one has no right to decide a case relying only on the evidence of such witness, or on the evidence of other witnesses equally interested.

What is Mercure's special competence? The Judge of first instance tells us (on page 1079 already cited) in the following words:

> "He (Mercure) has rafted logs on the St. Francis River
> "since 1885: He knows all the holes and nooks in the river:
> "He has seen the river in its natural state, and also since
> "it has been dammed at Drummondville and later at Hem-
> "mings Falls: He witnessed the ice break-up and Spring
> "floods for over 45 years, and always took a keen interest
> "in them, as every Spring he was waiting for the river to
> "get clear to start floating his logs."

In fact, Mercure himself claims this competence. But how does the fact of knowing the depressions of the river-bed or the sand bars existing here and there, or the fact of waiting with im-

patience every Spring for the ice break-up to float some timber, give to Mercure the necessary competence to appreciate the conditions of the formation of the ice and frazil.

Nevertheless, during the course of this long testimony, Mercure everywhere expresses opinions to the effect that the state of the river has been changed, and that the chances of ice jams have been increased, etc., when all these questions require much more than a superficial observation.

And the Court will realize that all the other witnesses quoted on page 1079 of the record, as having corroborated Mercure, are still less competent than he, and that most of them have no competence whatsoever to appreciate those facts, about which they give expert opinions.

— — — — — —

Let us now consider the facts disclosed by the evidence. We admit at once that the elevation reached by the water, upstream from the dam, in April 1928, is the most considerable one which was ever recorded.

We add also that the ice break-up of 1928, on the whole course of the St. Francis River, was the most considerable and disastrous one ever recorded.

At Richmond, mile 64, where the conditions of the river are absolutely natural, and always were, there exists, since 1916, a gauging station of the Quebec Streams Commission. There the water level is measured two or three times each day, and the flow of the water is figured. Now then, Mr. Lefebvre has filed (Exhibit Z23) a graph indicating the highest elvations of the water, during the ice break-ups since 1916. In 1919, the elevation is 14 on the scale. In 1920, it is 18.5 and in 1928 it is 26. That is nearly 8 feet higher than the maximum recorded from 1916 to 1928. These are official records of the Quebec Streams Commission.

Mr. Frank Bedard, former Mayor of Richmond, was 65 years old at the time of the hearing, and Mr. John C. Mairs was 55 years old. Both testified and affirmed that the flood of 1928 was the worst recorded at Richmond, in at least 40 years, Bedard page 415, Vol. 3) and Mairs (page 396, Vol. 2).

Both have established the precise fact that this flood at Richmond had caused a water elevation 4 feet higher than the maximum ever recorded in 40 years, Bedard 415) and Mairs (page 396).

In the face of these two testimonies, we ask this question. If the ice jam of 1928 at Richmond was greater than ever before recorded, why should we be so astonished if ice jams near Drummondville are also greater than ever recorded in the past?

According to Respondent, the water elevation in the neighbourhood of the dam in 1928 is attributable to the dam. But the dam did not exist in 1915, and nevertheless, Pancrasse Allard, Respondent's witness, and who himself has sued Appellant in damages, tells us (page 325, Vol. 2) that in 1915 the water rose in front of his place to an elevation only 3 feet lower than in 1928.

Mr. Fred Abercrombie, residing at Kingsey, upstream from Allard, tells us that in front of his place in 1928 the water rose in his barns, but in 1913 the water at his place had reached the same elevation or thereabouts, and the dam did not then exist. Abercrombie (pages 435 and 434, Vol. 3).

Mr. Omer Jutras, who lives on the west side of the river, slightly downstream from Abercrombie, called as Respondent's witness, gave the same version as Abercrombie, to the effect that the water elevation at his place in 1915 and in 1928 was the same — (page 444, Vol. 3). He adds this common-sense truth (page 181, Vol. 1), that is to say, that the floods for a number of years have greatly increased in intensity, a phenomenon which is not particular to our country, but to all countries where an intensive and inconsiderate deforestation has been permitted along the rivers, thereby causing sudden floods, which were not known in days gone by, when the shores of the rivers were wooded in part, or in whole. These are the principal events which we were able to bring out between Richmond and the Dauphinais Rapid.

— — — — — —

Let us now come to one of the points most discussed in the case. Respondent's witnesses admit that ice jams used to form at the foot of the Dauphinais Rapid while in its natural state, but they all contend that these ice jams were less pronounced than those which formed there in 1927 and 1928, after the erection of the dam. Let us peruse the facts. The construction works of the dam were begun in the Fall of 1923. During the winter, and in the Spring of 1924, Mr. F. F. Griffin, Engineer in Charge of the Works, paid numerous visits in the neighbouring territories, and on the river during the winter, to ascertain certain conditions, which he recorded in written reports, and which were guaranteed more exactly by numerous photographs.

Now, towards the 17th of April, 1924, four or five days after the ice break-up, he went to Dauphinais' and there found the traces of an ice break-up, which had raised the water to elevation 327. (See Griffin's evidence, Vol. 4, page 636, etc.) We also refer to the photographs filed as Exhibits Q. & R., which show the importance of this ice break-up and the elevation that the ice floes had reached after the ice break-up. Apart from the evidence of Mr. Griffin, who gives us the very clear reasons which had made him to come to the conclusion that an ice jam had existed at that spot, let us add that the flow of the river, at the time of the ice break-up of 1924, was but 15,800 cubic feet per second, and that the plan, Exhibit 65, shows that on the 11th of September, 1924, whilst the flow of clear water was 65,000 cubic feet per second, the elevation of the water was 323 at the same spot. (See Lefebvre's evidence, Vol. 4, page 801).

As already mentioned, the Quebec Streams Commission had a hydrometric scale at Labonté's, and the section of the river was figured and measured for the various elevations of water. (See Exhibit 68, Official Graph, filed by Mr. Olivier Lefebvre). with this data, it is easy for an engineer to figure out the water elevation on the scale corresponding to any flow of the river, and Mr. Arthur Surveyer tells us (Vol. 4, page 783), that a flow of 25,000 cubic feet per second is equivalent to elevation 313 on the scale at Labonté's. As the water is always at a higher level at Dauphinais', let us say that the water level would have been at most 313 at Dauphinais' with a flow of 15,800 cubic feet per second. Therefore, it took an ice jam to hold the water at elevation 327, and that ice jam had a 14 ft. head of water. Now then, as early as 1927, Dauphinais had entered suit in damages because the water was supposed to have risen to elevation 327, according to the findings of the Engineer, Mr. Seraphin Opimet. After evidence had been adduced of an ice jam in 1924, before the erection of the dam, at the same elevation, Mr. Ouimet endeavoured to correct himself and added three feet on his plans, as he admits himself in his testimony in the present case (Vol. 2, page 197, etc.), and, as a matter of fact, this point is admitted by the Hon. Juge Stein in his Judgment, of which certified copies are filed before this Court. In an attempt to justify himself he explained that according to his measurements, the spillway was at elevation 311, whilst in fact it is at elevation 314. But there are everywhere, along the river, bench marks established by the Geodetical Service of Ottawa. The Quebec Streams Commission and the Appellant Company use these bench marks, and, as a matter of fact, have adopted same. How come,

that an engineer-surveyer, presumed to be an expert, could have made such a mistake of 3 feet? What value should be given to his findings?

But let us take even the corrected figure of 330 as the water level in 1927. A water flow of 15,800 cubic feet per second formed an ice jam at elevation 327 in 1924 before the erection of the dam. A water flow of more than 40,000 cubic feet par second in 1927 caused an ice jam at elevation 330. Immediately thereafter the Claimant's Syndicate is organized. Mercure, this witness who is so serious, and whose testimony should be accepted without reserve, finances the suit. Therefore, from that moment, all these witnesses are prepared to believe and state before this Court than an ice jam at elevation 330, with a water flow of 40,000 cubic feet per second, is necessarily caused by the dam, whilst, in the natural state of the river and with a water flow of 15,800 cubic feet per second, an ice jam was formed at elevation 327. But all these people are unware of the greater water flow of the river and of the special conditions, which can readily explain the difference in elevation between these two years. But in spite of their ignorance on these points they nevertheless enter into judicial proceedings. With the financial help of Mr. Mercure, this honest witness, they organize, what the Hon. Judge Stein practically qualifies as an attempt at blackmail, by fabricating evidence of damages of unheard of phantasy. If these gentlemen were so blinded and so unscrupulous in fabricating their fictitious and fallacious claims, if they succeeded in bringing to their rescue as expert witnesses, people otherwise considered as honest men, we wonder what importance we should give to the exactness of their point of view, when recalling their oldest memories they attempt to show us all what took place on the river before the erection of this famous dam.

— — — — — —

There remains the ice jam of 1928, at elevation 334, according to the first figures of Mr. Ouimet, or at elevation 337, according to his corrected figures. It would represent an additional elevation of seven or ten feet, if we accept one or the other of Mr. Ouimet's way of figuring. But the regular water flow of the river, which was 15,800 cubic feet per second in 1924, and 40,000 cubic feet in 1927, was more than 60,000 cubic feet per second in 1928, and at Richmond, under natural conditions, we find an increase in elevation of eight feet over the maximum recorded since 1916 by the Quebec Streams Commission. Now then, it is clearly shown that the enormous ice jam which formed at Richmond,broke

up exactly at noon, on Saturday, the 7th of April. With the observations made by Mr. Dunfield (Vol. 4, page 665), and by the Respondent's witness, Adelard Cusson (Vol. 2, page 175), we are able to determine the speed of the ice jam in the river at five miles per hour. At that speed, and taking into account that the distance separating Richmond from the Dauphinais Rapid is approximately twenty miles, there is reason to presume that the ice jam at Richmond joined the ice formation then existing opposite the Dauphinais property, around 4 o'clock in the afternoon. It is then that this ice jam, which was not very considerable up to that time, takes on enormous proportions and breaks up under the pressure of the masses of water and ice coming from Richmond. This ice jam breaks up around 4:15 in the afternoon (Dunfield's evidence, Vol. 4, page 665). Making its way through the ice, still in Labonté-Dauphinais Basin, this ice jam reaches the head of the former Hemmings Rapid, and finally reforms and rests on the crest of the hogback existing across the full width of the river. This ice jam holds the water at practically the same elevation of 334 or 335, and thus holds until 3 o'clock in the afternoon on the 8th of April, when it breaks up, freeing that enormous quantity of ice and water, causing to the Railway the damages claimed.

Respondent's witnesses admit that ice jams did form opposite Dauphinais' property when the river was in its natural state, but they all categorically refused to admit that ice jams could have formed at the head of the Hemmings Rapid in its natural state on that particular spot, called the hogback, and where the ice stopped in 1928.

They so categorically denied even the possibility of such an event, that their principal expert, Mr. McLachlan, took upon himself to uphold their contention in his testimony in chief (Vol. 2, p. 304). It is striking to see the biting irony with which this expert attempts to scourge the Appellant's expert engineers, who had dared to admit the possibility of such an ice jam and to state that it had stopped at that point. Let us quote a few lines from this interesting testimony:

"How any person can suggest that that thing would be stop-
"ping at that point is beyond by comprehension. It contradicts
"everything I know about this whole subject, and as you travel
"along the river above, say above Richmond, there are sills in the
"river that are more pronounced that this sill is. I have never
"heard of any jams being formed by them. On the St. Lawrence
"we have sills from the Cornwall Island and Cornwall. We have

"sills at the end of Cornwall Island and the Canadian shore. We "have seen for years and years great ice jams, great ice packs move "from above, down stream into Lake St. Francis, down to these "points. We have never had a jam where those sills are. The only "places we get the jams in rivers when ice packs are moving out, "are places where the shore is converging and where resistance to "the protection of the sheet ice is gradually set up by the ice being "pinched between the two shores.

"It is to my mind inconceivable that the ice in moving out "form above Labonte's gauging station would be stopped by the "sill at station 84."

Unfortunately for Mr. McLachlan, and for Respondent's other witnesses on the facts, we have proven the existence of such an ice jam exactly on the hogback, in 1919. In that year, 1919, on the 30th or 31st of March, the water at Labonté's reached an elevation of 322.48, which corresponds at that spot to a water flow of more than 100,000 cubic feet per second. (See evidence of Arthur Surveyer, Vol. 4, page 783 and Lefebvre, Vol. 4, page 716). Now then, according to the records of the Quebec Streams Commission, the water flow of the river on that day was only 25,000 cubic feet per second, corresponding to 313 on the scale. It is evident that there was an artificial elevation of 9½ feet, evidently caused by an ice jam.

Witnesses as to facts, on both sides, have mentioned or referred to ice jams at Hemmings Falls, and naturally the one of 1919 was considered by Labonté, and by the other witnesses, as having taken place at Hemmings Falls. In fact, that was an ideal spot for ice jams, and it is easy to understand the mistake of those who only made superficial observations. As a matter of fact, they were mistaken, as we have shown that it was physically impossible that the ice jam holding the water, in front of Labonté's, at elevation 322.48, could be located where the dam presently exists.

In fact, the Engineer, Mr. F. F. Griffin, explained that before the erection of the dam, a few arpents upstream from the actual dam, the river bank was at an elevation varying from 301 to 305 for a distance of 650 feet (Vol. 4, page 843). When considerable ice jams formed at the spot where the dam is now situated, the raised water in the river would escape through this hollow in the bank and flowing through a gully situated fairly close to the river, would flood the territory located downstream

from the present dam, as we will show further on when we refer to the floods of 1887 and 1913. Now then, in 1919, the water did not escape through this hollow. The territory flooded in 1887 and in 1913 was not flooded in 1919 (Eugene Dionne, Vol. 3, page 610). Yet, in 1919 the water was held at elevation 322.48 at a point over a mile upstream from this depression in the bank where the ground is 22 to 16 feet lower than the elevation at which the water was held at Labonté's. As the water did not escape outside of the river-bed to run down again into the river through another bed, we must naturally come to the conclusion that the 1919 jam held the artificial lake at elevation 322.48, because this ice jam was located at a spot where the river banks were high enough to hold it. It is necessary to go upstream along the river as far as the hogback to find banks high enough to hold the water at such an elevation.

So, facing this clear and complete evidence, Mr. McLachan was obliged to retrace his steps, and two weeks later had to say the following words to the Court: (Vol. 5, page 948, 8th line, etc.)

"What happened in that case is a very special thing, some-"thing that we engineers who are dealing with rivers, are always "on the lookout for. The ice, undoubtedly flowing down over the "sill and over the very shallow rapids immediately below the sill, "which are shown by the plans and contours filed here as being "very uniform — what happened was that river in a super cool "condition, the ice and the water in a super cool condition adhered "to the floor of that rapid, and in that way built up a temporary "obstruction right on the sill, which stayed there only so long as "the weather was cold, and great quantities of frazil continued to "be carried along. Just as soon as the weather started to get warm "this obstruction lifted and floated away. It is not a thing, that "could possibly happened under the conditions of 1928."

— — — — — —

Respondent also says that the ice jam at Labonté's on the 7th and 8th of April, 1928, was considerably greater than the one recorded in 1919. This is true. But one must not forget that the ice break-up of 1928 presents very special characteristics, which we have brought up and proved, the principal being as follows:—

1o. The regular water flow of the river on the 6th, 7th and 8th of April, 1928, was the highest ever recorded on the St.

Francis River for an ice break-up period; and this fact is established at page 800 of the record, Vol. 4, in the evidence of Mr. Lefebvre, who gave the official records of the Quebec Streams Commission.

2o. This abnormal flow was due to an extraordinary heat wave for that time of the year. As it is seen on the Official Graph, filed by Mr. Lefebvre as Exhibit Z-21, the temperature during several days was a real summer one, the thermometer did not come down to the freezing point, even during the nights. This abnormal flow was due to the very high run-off caused by the rapidly melting snow.

3o. In the St. Francis River, owing to special conditions which had prevailed at the beginning of the preceding winter, and which we will explain further, an abnormal quantity of frazil had formed, an ice formation of a most dangerous nature in rivers, which has the effect of causing ice jams during the period of ice break-ups, and which renders the breaking up of the river difficult and serious.

4o. Due partly to nature and partly to chance, all the ice of the St. Francis River, from Lennoxville at mile 90, to Labonté's, at mile 36, was concentrated at the same spot on the same day, which, of course, was liable to seriously aggravate an ice break-up which, already, was likely to be very serious, due to the other causes hereinbefore referred to.

1o. *The abnormal flow of the river*:—

This first point requires no further demonstration. Official statistics have been kept for a number of years by the Quebec Streams Commission, and Mr. Lefebvre (Vol. 4, page 800), has indicated that the water flow of 70,000 cu. ft. per second, recorded in 1928, is, by far, the highest ever recorded at the time of ice break-ups. The nearest approach to this maximum flow was recorded in 1927, when the flow reached 40,000 cu. ft. per second.

We have seen that a flow of 15,800 cu. ft. per second, as the one recorded in 1924, would correspond approximately to elevation 313 at Dauphinais'. A flow of 70,000 cu. ft. per second would correspond if we refer to Exhibit 65, to at least elevation 325. And a flow of 40,000, as in 1927, would correspond to an intermediate elevation,

This would determine the elevation of clear water at Dauphinais'. Considering this data, and when we remember that an ice jam under natural conditions, in 1924, had caused an elevation of 327, that is to say, a 14 ft. head of water, should we be surprised to find elevations of 330 in 1927 and of 337 in 1928.

On this point, we wish to specially mention the statement made by Mr. Lefebvre (page 801 of the record), to the effect that in a general way, the regular flow of a river is always comparatively low at the time of the ice break-up and that the high flow in the Spring, due to the run-off caused by the melting snow, usually follows the ice break-up by seven or eight days. It would seem reasonable that it is not our fault if Providence saw fit to modify this general rule in 1928 and to cause the ice break-up to coincide with the maximum flow of the river, which naturally had the effect of increasing, in a river great proportion, the chances of danger.

For example, in 1924, when an ice jam caused the water to rise at elevation 327, at Dauphinais', the flow was only 15,800 cu. ft. per second. A few days later the flow, due to the run-off, was more than 40,000 cu. ft. per second. What would have taken place at Dauphinais', if the ice had still been stationary at that moment?

2o. *Exceptionnally high temperature at the time of the break-up*:—

The second point also does not require to be developed at length. It is evident that a temperature, as recorded in 1928, is liable to cause the snow to melt suddenly, and the enormous and sudden flood of a river is liable to cause an early break-up of the ice, which is the principal cause of ice jams.

Mr. Olivier Lefebvre, the Chief Engineer of the Quebec Streams Commission, in his evidence (pages 800, and subsequent, of the record), has clearly explained a common sense truth, which is too often lost sight of by those who only see the result by superficial observations and who do not attempt to find the causes of such a result.

Very often, and we could add generally, the ice break-up takes place slowly. The sun corrodes the ice from day to day, and it becomes thinner and less resistant. On the other hand, when the more or less warm temperature of the day is follow-

ed by a cold spring night, the streams bringing water to the river stop, more or less, and the water, brought to the river during the day, flows down during the night. If these conditions prevail during ten or fifteen days, the ice becomes "Pourrie" (rotten), as the people say, the flow of the river remains normal and the ice, which has been weakened, flows down in small harmless pieces.

On the contrary, when, as in 1928, the temperature, under exceptional conditions, reaches 75° Fahr., and never goes down below the freezing point during the night, and this during more than four consecutive days, it is easy to understand that the river became extraordinarily swollen and that it should have broken its ice covering when this ice was still solid and very resistant, according to all the testimonies of the witnesses of both parties.

This simple fact enables us to realize how impossible it is to compare the conditions on the river, between any two years, and to draw a conclusion enabling us to determine with some exactitude what is liable to take place in the Spring. Thus, during the winter of 1928-29, according to Mercure, Cusson and Laprade, there would have been on the river ice formations more serious than had ever seen.

Mercure ..... Vol. 1, pages 114 and subsequent pages;
Cusson ..... Vol. 1, pages 160 and subsequent pages;
Laprade ..... Vol. 2, page 225.

Their observations bear mostly on the point forming the foot of Dauphinais Rapid. According to them, the conditions existing at the point were far more dangerous than the conditions existing at the same point in the winter of 1927-28. Now, in 1929, due to the various natural conditions, nothing serious took place at the time of the ice break-up. Whilst in 1928, under conditions which they consider far less serious, at the same spot, a very enormous ice jam took place. Why ? This dam, which, according to them, caused all this harm, existed also in 1929. Why should there be such different results in 1928 and in 1929, if it is not that nature proceeded differently, according to rules that we are not able to appreciate in any exact way?

3o. *The abnormal formation of frazil in the preceding winter*:—

The third point, in our mind, is extremely important.

The cold temperature of the winter causes on our rivers two kinds of ice: (a) the surface ice which often forms in one night on a large surface of calm water, and which will gradually thicken until the Spring, according to the conditions of temperature, and especially according to the more or less heavy coat of snow forming an insulation, and which intervenes between the coat of ice already formed and the outside cold air, which alone causes freesing; (b) the frazil, ice needles which form in waters too tumultous to allow the formation of surface ice. Each contact of the water with sufficiently cold air causes such ice crystals which follow the current and stop in calm water, where they form heaps, which subsequently harden and become as resistant as surface ice. Mr. McLachlan, the Respondent's expert, and Mr. Lefebvre, our expert, both agree in explaining that the frazil formation is the most dangerous one in rivers. Whilst the surface ice hardly exceeds two feet in thickenss, the frazil which sticks under that surface ice often reaches five, six, eight and ten feet in thickness, and even more. Messrs. McLachlan and Lefebvre were both members of the Joint Commission of Engineers, studying the project of the St. Lawrence Waterways. Very serious tests were made and an extract of the report of this Commission has been filed in the record as Exhibit 41. It appears from this report, and from the findings of those two engineers, that frazil forms in far greater quantity than the solid ice of the surface. For every square foot of calm water surface, two cubic feet of surface ice are formed, of a thickness of two feet, which appears to be a reasonable average, but for every square foot of surface exposed to the air in a rapid the formation of frazil lasts all winter, with the result that the quantity of frazil reaches as much as 15 to 20 cubic feet for each square foot of exposed surface.

It is easy, therefore, to understand the phenomenon to which we refer, i. e., this thick formation of ice which thus forms at the foot of each rapid, and which is more or less important, according to the length and grade of the rapid. The tests made in January and February 1921, in the basin existing between the two dams, revealed the formation of frazil shown on the plan filed by the Engineer Bouliane, as Exhibits Z9, Z10 and Z11. There can be seen that on the 21st of February there are, under the relatively thin coat of the surface, frazil formations reaching eleven feet in thickness. This frazil was formed by the Hemmings Rapid, then in its natural state, and which had a difference in level of 45 feet in a distance of one mile. That was evidently a considerable rapid, capable of forming frazil in sufficient quantity to practically fill this basin of calm water existing downstream, and, as a matter of fact, this took place during certain winters.

Further upstream there existed Dauphinais' Rapid, with a difference in level of 16 to 17 feet, producing also an enormous quantity of frazil, and which, according to Mr. McLachlan's own evidence, always settles in the basin of calm waters situated at the foot of each rapid.

The Hemmings Rapid has now disappeared, having been submerged following the erection of the dam. The Dauphinais Rapid is also submerged, for the most part, and can produce only a small proportion of the frazil which it formerly produced when in its natural state. This section of the river is, therefore, improved in this regard by the erection of the dam.

But there are numerous other rapids in the St. Francis River. As a matter of fact, the river constitutes a constant succession of rapids, each separated by a more or less long basin of calm water. These rapids continue to produce frazil, and this can explain why the ice break-ups of this river are naturally more dangerous than on a river of calm water in its full length.

Needless to say, many factors of nature combine to modify, more or less, every year, these frazil formations. For instance, if the regular flow of the river remains low during all the cold season, as is generally the case, the current in the river will be much slower. The surface ice will form sooner, and on a much greater area. Even in the case of rapids, the frazil formed will gradually adhere to the under part of the surface ice at the foot of the rapid, and if the current is slow enough an artificial formation of frazil ice will take place, from the downstream end towards upstream, and finally the whole surface of the rapid will be covered this ice formed by these frazil crystals.

The formation of frazil then stops on this rapid, at least, as long as a greater flow does not break this ice formation covering the rapid.

It is easy, therefore, to understand the importance that Mr. Lefebvre gives to this absolutely proven and uncontradicted factor namely:— the abnormal elevation of the water in the St. Francis River from the beginning of the winter of 1927, until January, 1928. The fast current caused by this abnormal flow prevented the surface ice from forming at many points where it would have formed, in the event of a lesser flow. A swift current, preventing them from being covered with this frazil formation, as we have explained, was kept up in the rapids. Therefore, the river was producing abnormal quantities of frazil. It is thus that at a de-

termined point, where circumstances necessitated a special study, namely at Bromptonville, an unprecedented formation of frazil was seen. The story thereof is told by Frank Ford, Superintendant of the Brompton Pulp & Paper Company at that place (pages 379 and following of the record).

There is at that location a dam forming part of the power development of the Paper Company. A short distance upstream there is a rapid, which is generally covered by ice on the 20th of December. Now then, in December, 1927, and in January, 1928, due to the abnormal elevation of water, it was still completely open, and frazil was formed in such enormous quantities, that the mill was practically shut down during three weeks, a condition which had never been known before. and this mill has been in operation for twenty-two years.

The mill was shut down on account of the frazil which completely filled the river and prevented the water from reaching the power plant, and, as a result thereof all the work mentioned by Mr. Ford was required.

Circumstances made it necessary to make these observations. None were made elsewhere, but the causes which had produced, at Bromptonville, this abnormal quantity of frazil, existed in the other sections of the river.

It is more readily understood now why a river, filled here and there with such ice formations, should have had a serious break-up in the spring, particularly when the conditions of flow of water and of temperature hereinabove referred to, played their part and aggravated a situation which was already serious.

May we be permitted at this point to point out that the Honourable Judge of first instance committed a very grave mistake, in not appreciating this particular point, when at page 1071 of the record, he states that the water which fell in the autumn of 1927, must have flowed down the river within the few days that followed. It is proven that the flow at low water is approximately 2400 cubic feet per second (Lefebvre, 797). It is also admitted that during the winter season the water is usually low, and this fact is commonly known. Now then, during the first part of the winter of 1927-28, according to Lefebvre's testimony (page 825), we find the following excessively high flows for the season:—

Mean flow for November	23,000 cu. ft. per second
Mean flow for December	13,000 cu. ft. per second.

This fact is recognized by the principal expert of the other party, Mr. McLachlan, who admits, in his evidence, this abnormal flow, comparing it with another abnormal flow which is supposed to have occurred at the beginning of the winter of 1919-20. According to this expert, the flow on the 2nd of January 1928, was still 17,000 cu. ft. per second (page 287, line 40 and following lines).

We point out futhermore that the Honourable Judge of first instance refuses to admit as established, the fact that there were extraordinary rainfalls in the fall of 1927. Nevertheless, the charts filed as Exhibit 33, by the Respondent, show rainfalls of 3.11 inches per 24 hours on the 2nd of November, and 1.92 inches per hours on the 3rd of November, at Sherbrooke, (Vol. 6, page 1013). When one knows that a rainfall of one inch per 24 hours is considered a very heavy rainfall, what about those that were then recorded ? At any rate, we find in the river on the 5th of November, 1927, a flow of clear water of 70,000 cubic feet per second.

To close this point, we refer the Court to the evidence of Seraphin Ouimet (page 196), one of the principal witnesses of Respondent, who mentions frazil blocks 10 ft. in thickness, which he noticed on the 8th of April, 1928. It is by means of such blocks, which were noticed in 1928, that such ice jams as found in 1928 could be formed. And when these formations of ice and frazil have had time to melt and to disintegrate slowly at a proper temperature they, on the contrary, flow down the river in small pieces, absolutely harmless and of no consistency.

4o. *Enormous concentration of ice caused by nature*:—

Our fourth point in the argument concerns that enormous ice concentration which finally formed at the same spot on the river, a mile and a half from the dam, and which produced the Labonte ice jam, the jam that broke up on the 8th of April at 3 o'clock in the afternoon.

There is one fact which is clearly shown by the evidence, admitted by Mr. McLachlan, Respondent's principal expert, proven by the evidence of Mr. Lefebvre, and which constitutes a fact ascertained by the Quebec Streams Commission, and that is, that the ice break up on the St. Francis River, due to the course of the river from South to North, generally takes place from upstream down because the ice floes of the upper part of the river

disintegrate first, and then strike ice formations still in place and solid in the lower part of the river. Owing to the conditions of temperature, which vary so much each year, and to which we hereinabove referred, this state of affairs does not always produce dangerous conditions, but this is always liable to aggravate the ice break-ups. Now then, in 1928, we have the uncontradicted evidence that all the ice from Lennoxville, at mile 90, came down and was concentrated at the same point, when this ice was overloaded with enormous accumulations of frazil, when it was still "green", as our people would picturesquely say, and when the flow of the river was at a maximum never before recorded at a time of break-up. All these circumstances combined to produce a disastrous result; but these circumstances were all natural ones, and were beyond our control.

But while this ice of the upper part of the river disintegrates before the ice of the lower part of the river, it is quite possible nevertheless, that its flow may be stopped and that it may form ice jams, at certain points, which remain and hold there. As an example, there is the fact reported by Omer Jutras concerning an ice jam which formed in 1929, slightly downstream from his property which remained in place nearly a week. Consequently all the ice flowing downstream could not concentrate at Drummondville; and during that time the ice on the lower part of the river melted, or disintegrated, and there was no danger of any serious situation. Mr. de Gaspe Beaubien, in that part of his evidence where he explains the different ice jams which formed in 1928. the formation, location and duration of which he indicated on the graph, Exhibit Z-24, explained to us the common-sense truth, which must always be remembered, i. e., the important part which chance played in that ice concentration and the very different effects which would have resulted if, for example, the ice jam at Richmond had been delayed in its travel, as it happened at Kingsey in 1929, and if the Dauphinais ice jam had started to move before the arrival of the one from Richmond.

The Official Report of the Roads Department of the Province of Quebec for 1928 shows that the ice break up of 1928 was the most disastrous one ever recorded throughout the Province of Quebec, and that the region of the Eastern Townships was more affected than any other part of the Province. It is sufficient, on this point, to refer to the testimonies of Frank Bedard, John Mairs and Brouillete, to read their account of what took place at Richmond and to examine the photographs filed by Mr.

Brouillette as Exhibits C. D, and E, to realize that the above mentioned report is true. Moreover, it is public knowledge that several parts in the East End of Montreal were very seriously flooded in the Spring of 1928, a condition which had not occurred in Montreal since 1887. This flood in Montreal was caused by an ice jam near Boucherville. Why didn't a similar situation occur from 1887 to 1928? Moreover there was no concrete dam across the St. Lawrence.

In submitting in defence all this evidence, backed by facts by definite findings and by a large number of facts offcially proven, Appellant desired to show positively that the dam erected at Hemmings Falls was not the cause of the serious flood which took place in 1928. It is important to remember however that the burden of proving our responsibility lies with the Respondent. We claim that we went beyond what was required from us in this respect and that in view of all the facts proven by us, Respondent's evidence is insufficient to create a reasonable conviction that the dam was responsible for the abnormal elevation of the water in 1928. Too many natural causes intervened. Too many similar events took place in the past and, in the case of 1928, at so many other points, to allow anyone to draw the conclusion that we are responsible for the events which occurred in 1928 above the dam at Hemmings Falls.

SIMILAR EVENTS HAPPENED IN PAST YEARS

We now come to the second point or our plea, and we intend to show, beyond any doubt, that similar events, if not more serious one, occurred in the past at the railway bridge, before 1925, and, therefore, before the erection of the Hemmings Falls Dam. If we succeed in demonstrating this point, as we feel sure we will, we shall establish, we believe, indisputable evidence that the events of 1928 are due to natural causes and not to the dam.

The break-up in 1887

In proving the existence of similar events in the past, we were naturally limited to a certain period. If happy nations have no history, we are in this category, as we have no historical documents to show what took place beyond the memory of those who are still living. The first evidence we have goes back to 1887, that is 47 years ago. Our witnesses are: The Hon. Walter Mitchell, formerly Provincial Treasurer of the Province of Quebec, and Messrs Onesime Fleurant and Mathias Berthiaume. They have not been contradicted in the least by Respondent. In

order that we might be in a position to locate the various places mentioned by these witnesses, and by several others, we had the Engineer, Mr. Mahaffy, prepare two plans, filed as Exhibits H & G.

The plan filed as Exhibit H. shows a section of the river and a section of the land close by between the small dam built by the Town of Drummondville in 1896, and the bridge for vehicles, that is to say, a stretch approximately 1400 feet in length.

The plan filed as Exhibit G. shows a section of the land on the shore of the river, a few hundred feet downstream from the present dam at Hemmings Falls, and indicates certain buildings in that territory and also the site of certain other buildings which were there in the past.

The two plans give the land elevations, and the contours of the river, and in order that these may be correctly understood, we refer the Court to the very clear explanations given by Mr. Mahaffy at pages 488 and following of the record.

Now then, in 1887, according to the Hon. Walter Mitchell, there was a very serious flood at Drummondville during the ice break-up. The Hon. Senator Mitchell, who was interested in some industry situated on the east side of the river, in the town of Drummondville had taken his son, now the Hon. Walter Mitchell, along to show him the havoc caused by the ice break-up.

There existed at that time, very close to the present site of the railway bridge, the house occupied by a family named "Blais," and this house is still there to-day. The elevation of its floor was checked, and plan H. shows that it was at elevation 264.8. Now then, in 1887, the water flooded that house, and the Hon. Walter Mitchell, without being able to give the exact height that the water reached over the floor, tells us, at page 699 of the record "It had been flooded, and my recollection is, that they had been compelled to move out, but I am not sure of that. I know it was in a terrible state, and I was taken and shown around because it had been flooded. It was Blais' house."

Therefore, the water had reached at that spot an elevation exceeding 265, and probably reaching 266 or 267, if we consider the terrible condition of this house as described by Mr. Mitchell. Now, how high did the water rise in 1928 exactly at the same spot ? On plan H. can be seen the foundations of the house, now burnt down, right near the Blais house. This house was inhabited in 1928. Its cement foundations are at elevation

265. Now then, in 1928, the water rose to a height of 3 feet over the floor of this house, therefore, to elevation 268 (Dame Malvina Martel, Vol. 1, page 45, lines 40 and subsequent lines). Madame Martel is one of Respondent's witnesses.

Now let us remember that the railway bridge was not built in the Spring of 1887, according to the Hon. Walter Mitchell (page 700, line 14.....)

Let us remember futhermore, that the railway bridge, with its long embankments at each end considerably narrows the bed of the river for a water elevation of 268. The plan filed as Exhibit "W" and the explanations given by Mr. C. F. K. Woodyatt (Vol. 4, pages 656 .....) show that for a water elevation of 268, the cross section of the river available for the flow of water was 22,396 sq. ft. in the natural state of the river but that it is now reduced to 12,188 sq. ft. since the construction of the railway bridge. If the railway bridge had been built in the Spring of 1887, the backing up of the water, caused by this enormous obstruction, would certainly have forced the water to rise two or three feet more at Blais' house. We are therefore right in saying that in 1887 the ice break up at the site of railway bridge was as serious, if not more serious, than it was in 1928.

There were other witnesses to this ice break-up in 1887, one of these is a silent witness. It is a tree which was situated between the railway bridge and the bridge for vehicles, and which is shown on Plan "H" as tree No. 7. It was wounded by the ice, in the Spring of 1887, at elevation 265. One must remember that there is a considerable difference in elevation between the railway bridge and the bridge for vehicles, so that elevation 265, near the bridge for vehicles corresponds to an elevation of more than 270 immediately upstream from the railway bridge.

Mr. Ernest Menard, Forestry Engineer, has traced marks made by the ice on trees indicated on Plan "H". Concerning particularly the tree marked No. 7, he wished that no doubt be left in anyone's mind, and he produced before the Court a section of that tree in order to show to the Judge and to the attorneys the method he used and the facility with which he was able to determine that the wound found on that tree dated back to 1887, the Spring preceding the erection of the railway bridge.

Mr. Menard's explanations given to illustrate his findings can be found in Vol. 4 of the record, pages 615..... and two

reports filed by this witness as Exhibits L. and M. indicate the trees on which special studies were made and they indicate the age and elevation of the wounds caused by the ice. In our opinion, Mr. Menard's explanations are very conclusive.

Only Mr. McLachlan, Respondent's principal expert, attempted to contest these explanations, and especially as regards the tree marked No. 7 on Plan "H", he gave a very fancy explanation. According to him (page 927 of the record,) this mark, or wound, would have been caused by the machinery used in the construction of the bridge for vehicles. He has forgotten, however, an important fact, that is, that the bridge for vehicles was built in 1885 and that the wound on the tree was made in 1887, without possible contradiction. We will see that the Judge of first instance (page 1081, line 10), admits that the wound on tree No. 7, in his opinion, was made by the ice. Other witnesses have given us details of the importance and seriousness of that flood of 1887. They are Messrs. Onesime Fleurant and Mathias Berthiaume.

At the time of the hearing, in December 1932, Mr. Fleurant was 65 years old. He tells us at the beginning of his testimony that he had driven logs for twenty-two years, beginning at the age of 18, in 1885. On the second page of his testimony (Vol. 3, page 589, line 16...) he tells us that, a year or two after he had started driving logs (this would indicate 1887, with fair accuracy,) he saw a barn which had been lifted by the ice and carried further, and this occurred at Hemmings Falls, a short distance below the present location of the dam. He explains, further on, that he showed Mr. Mahaffy where this barn was situated at the time. And on Plan "G" Mr. Mahaffy has indicated, by three squares, in black, at the bottom of the plan on the right hand side, the spot where the old buildings, of which there still remain the foundations, were situated. The greater part of the land, indicated on Plan "G", now belongs to the Lafontaine Estate, and the Engineer wrote this name on the plan to indicate the site of the old buildings, which the witness Fleurant calls the Hemmings House and barn. This property formerly belonged to a lawyer named "Hemmings," and the Fall which is now developed has retained that name.

— — — — — —

Now that we have given these explanations, let us consider the importance of this flood of 1887. It is seen on Plan "'G", and this is admitted, that the normal elevation of the water is 265

opposite these old buildings. The elevations of the ground where these buildings were erected is 292 and 293. In order to enable the water and the ice to reach that spot in sufficient quantity to lift and move a barn, we must suppose an elevation exceeding 295 i.e., 30 feet above the normal level of the water. Where can we find, in the evidence, that in 1928 the water rose more than 25 or 26 feet above the normal level in any part of the river? And all this took place before the erection of any dam, since the small dam, situated 1100 feet upstream from the railway track, was built by the Town in 1896 (Mercure, page 544, Vol. 3 of the record.)

Witness Mathias Berthiaume, also saw what witness Fleurant tells us. We refer to his evidence (pages 598 and the following Vol. 3 of the record). We also refer to the explanations in this connection given by the learned Judge of first instance in his Judgment (Vol. 6, page 1081, line 39...).

These testimonies are uncontradicted, and show what an ice break-up under strictly natural conditions could do.

May we now be allowed to express our surprise when we read in the Judgment (Vol. 6, page 1081, line 10...) the following words:

> "For my part, I am inclined to believe that the scar (on "the tree No. 7, Plan "H") was caused by the ice; but I "must say that the evidence, on the whole, is not very sa- "tisfactory; in fact it could hardly be otherwise, in the "absence of eye-witnesses. We have no information what- "ever regarding the general conditions of the river in 1887; "we know nothing about the climatic conditions, the preci- "pitation of rain during the winter and the previous fall, "the flow of the river in the Spring, the thickness of the "ice carried down the river at the time of the break-up, "etc. It is extremely difficult, in the circumstances, to de- "termine the seriousness, and even the cause of the flood "which, apparently, occurred in the Spring of 1887."

WE RESPECTFULLY SUBMIT that there is no year, for which we have sufficient information to determine, with precision,the causes which brought about this or that serious ice break-up. Even for 1928 the year for which we have the largest amount of precise information, we may say that we know a certain number of contributing factors. But we do not pretend to know them all. We must say, particularly, that we lack, for any year, suffi-

cient precise data to enable us to draw conclusions with mathematical certainty. For instance, to demonstrate what we have in mind, the winter of 1934 was the most rigorous one that we had for a long time. Nevertheless, the ice was not thick during that winter and the ice break-up in the Spring was not serious? Why? There are numerous unknown causes, but there is one cause which is known, and it is an important one. That is, that the snowfall was considerable from the very beginning of the cold period and that it remained on the ice all through the winter, the temperature having remained very low. The sheet of ice was therefore protected throughout the winter by a thick coat of snow, acting as an insulation against the effect of the cold air, and, nevertheless, how many people would have declared, in good faith, that the ice should have become very thick? Besides, has the thickness of the ice much importance? Yes, if the conditions in the Spring are bad, no, if the conditions in the Spring are favourable.

Mr. Lefebvre, filed his Exhibit Z-14, a graph of the Quebec Streams Commission. On this graph it can be seen that, around the 20th of March, 1918, the ice opposite Labonte's property was more than 31 inches thick. These measurements are those of Ernest Labonte, one of the principal witnesses of Respondent. The next graph, Exhibit Z-15, shows that the ice, at the same spot, during the winter of 1918-19, never reached 20 inches in thickness. Now then, in the Spring of 1918, nothing serious happened. In the Spring of 1919, when the ice was much thinner, we have a much more serious ice jam. And the water at Labonte's where the Quebec Streams Commissions had a gauge, reached elevation 322.48.

May we humbly submit in this respect that what it was important to establish, and that we have done, was that in 1887, under absolutely natural conditions, the ice break-up at the railway bridge was as great and serious, if not more so, than the ice break-up recorded in 1928. Our conclusion, therefore, is, that the events which took place in 1928 cannot reasonably be attributed to any human agency inasmuch as Nature had itself produced similar events before any human intervention in the river.

Besides, as the Judge of first instance justly admits, it was incumbent upon the Respondent to establish our responsibility. The mere construction of the dam cannot create any presumption that the events which took place thereafter are attributable to it because such a presumption would be based on the fallacious argument : "Post hoc, ergo propter hoc."

Therefore, when we are told that the serious events of 1928 constitute evidence of our responsibility, it is sufficient that we should prove the occurence of similar events under strictly natural conditions in order that the Court should conclude that the ice break-up of 1928 cannot be attributed to human intervention. And if Respondent wishes to destroy this complete and perfect evidence, it is up to him to prove that those events took place under conditions of temperature or other conditions, which were worse, or at least as bad, as the conditions existing all along the river in 1928. But this evidence was not adduced and we are therefore entitled to derive the full benefit from this lack of evidence.

The Ice Break-up in 1913

We now come to the ice break-up of 1913. Our winesses saw more particularly what took place that year at Hemming Falls, in the area indicated on plan "G", and they told us about it. That is where, in 1887, the water and ice reached an elevation of, at least, 30 feet above the normal level of the river. In 1913 it was still worse. The present buildings of Lafontaine's farm are situated at elevation 299, and they were completely surrounded with water (Frank Bouchard, Vol. 3, page 538, line 43 and following). The other witnesses who saw perfectly what took place are Mathias Berthiaume (Vol. 3, page 598.....); Noel Boislair (Vol. 3, page 530.....); Esdras Dumaine (Vol. 3, page 602.....).

Respondent's witnesses and, in particular, Respondent's expert, Mr. Seraphin Ouimet (page 324, pages 330 and following), have detailed at length a contention, to the effect that trees, constructions, cultivated lands, etc., along rivers, constitute definite indications of the way in which rivers behave in their natural state, and that these trees, constructions, etc., established by nature, or by man, indicate the limits which the river never crosses in its natural state. Apart from the example of the Town of Richmond, already mentioned, when the water reached a height of 7 or 8 feet over the main commercial street, in 1928, under natural conditions, we may also mention the example of the Lafontaine farm, completely flooded in 1913, and which was covered with ice and water to a height of more than 12 feet, at places, and where the danger to the lives of Mr. Soucy, the farmer, and to his family, was so great, that his wife lost her reason. Over a width of cultivated land of approximately 1200 feet the ice was deposited in enormous piles as far back

from the river as the Drummondville-Richmond public road. The former buildings of Hemmings Farm, which had been located at elevation 292, would have been seriously flooded, if not destroyed.

The break-up in 1915

We now come to 1915, which is, together with 1887 and 1921, the year when the ice break-up was the worst at the railway bridge in Drummondville, in so far, at least, as we have been able to find witnesses having seen these happenings.

In 1915, the ice break-up took place about the 26th or 27th of February, according to witness, Phillippe Hamel (Vol. 3, page 580, lines 10 and following). On this page 580 and following, Mr. Hamel tells us what happened. We draw the attention of the Court to the fact that Mr. Hamel was in a good position to see what was taking place. Having heard that ice was piled up in large quantities at Hemmings Falls, he sent his family away from his house, which happened to be the old grist mill, then situated on the site of the present Hydro-Electric Plant of the Appellant, in the Town of Drummondville, slightly downstream from the railway. He then went to the railway bridge and made his observations from there. After ten minutes he saw a wall of ice coming down the river. This was evidently the Hemmings Falls ice jam which had let go, and this wall, mentioned by Mr. Hamel, was the mass of ice and water suddenly released and coming down the river like a tidal wave. This mass came down carrying before it the ice existing in the basin ahead, and it caused the damages of which Mr. Hamel spoke, carrying away the Town Bridge, damaging the grist mill, etc.

Many witnesses have described this ice break-up. They are, apart from Mr. Hamel, Esdras Dumaine (Vol. 3, page 602), Noel Boisclair (Vol. 3, page 530), Joseph David (Vol. 3, page 522), Joseph Ruel (Vol. 3, page 568). It would be superfluous to study their testimonies in detail, but let us merely mention that these witnesses have proven the following facts without contradiction:

(a) During, at least, one hour, ice and water passed in the river almost level with the railway bridge, exactly as they did in 1928.

(b) The viaduct then existing at the end of the embankment washed out in 1928 was filled completely with ice and water,

exactly as in 1928, and the road passing under this viaduct was eroded down to rock.

(c) The ground indicated on Plan "H" was severely flooded and covered all over with water and ice, just as in 1928.

(d) The ice reached the level of the rails and the upstream face of the railway embankments on either side of the river were covered with ice, which was piled up to the height of the rails, just as in 1928. And in connection with this last point, our witnesses were corroborated by Mr. Adolphe Toupin, road foreman for the Respondent, who was heard in rebuttal (Vol. 5, page 866, lines 30 and following).

The break-up in 1921:—

Let us now refer to the flood of 1921. One of our witnesses is Auguste Blanchette, who used to occupy the house which is now burnt down, but which is indicated on Plan "H" by the note "Old home foundation." His testimony refers to this 1921 flood only, and is found in Vol. 3, pages 518 and following. Another witness is Joseph Ruel, who came to visit his friend Blanchette, and to examine the damages the day following that of the flood. Other witnesses are Honore Girouard, then Engineer of the Town of Drummondville, and Walter A. Moisan, Mayor of the Town of Drummondville.

Messrs. J. W. Dunfield and Joseph Bouliane also gave us important details, which help us to understand what took place:

Dunfield ..... (page 660 and following, Vol. 4)
Bouliane ..... (page 689 and following, Vol. 4)

They explain that an enormous ice jam was formed at Hemmings Falls on the site of the present dam. They visited the site of the dam the next day and found that the ice had piled up to a great height. Photographs, Exhibit Z4, help us to understand the testimonies of Messrs. Dunfiled and Bouliane.

This ice jam broke on the 10th of March, 1931, and, according to Mr. Noel Proulx, a Respondent witness, the wave of ice and water coming down the river formed a high wall, sweeping all before it. He was on the bank of the river when he saw this enormous wave coming down, and he ran for his home, 200 feet away, and when he arrived there water was already in his house to the height of the windows (pages 882 and following, Vol. 5).

We also have the testimony of Mr. Honore Girouard, Civil Engineer, in the employ of the Town of Drummondville, as Town Engineer in 1921. According to him ,this wave of ice and water came down the river with such force, that the ice broke down one complete wall of the town pumping station, which was situated near Mr. Mercure's mill, this mill being indicated on Plan Z-9. This wall was the one on the upstream face of the pumping station, and it was broken down to a height of 7 to 8 feet, even though it was a solid brick wall, 12 inches thick.

(Honore Girouard, pages 560 and 561, Vol. 3).

As to Auguste Blanchette, he was in his house (the one referred to above), and he was watching the river, after having learned of the serious ice jam at Hemmings Falls, and that it might come down the river at anytime (page 518, Vol. 3). He then saw the break-up take place, as he relates it in a few lines on page 520: "C'était une houle qui s'en venait qui était bien dangereuse. J'en avais entendu parler le soir au village. Ils avaient dit que la glace levait, qu'elle était bien dangereuse. Le lendemain matin j'étais sur mes gardes. A un moment donné, j'ai aperçu l'eau. Là, j'ai ouvert ma porte, j'ai crié à ma famille: Sauvez-vous, on est mort ici. Je croyais que la glace partait, çà poussait de chaque bord de la rivière une affaire épouvantable. Et le frazil chez-nous à passé six (6) pieds d'épais aux fenêtres et aux chassis. On a eu le temps de se mettre assez loin, mais ça été bien juste pour se sauver".

And this occurred at a distance of 700 or 800 feet downstream from the Drummondville dam, that is, 300 feet upstream from the railway.

Water came up into the house from 3 to 4 feet (page 520), and this house is the same in which there were three feet of water in 1928, testimony of Dame Malvina Martel (page 45, Vol. 1).

Joseph Ruel, states in his testimony (pages 571 and following, Vol. 3) that the next day he saw the damages caused by the break-up, viz., that the ice was covering the railway embankments, up to the tracks, and that the road under the viaduct was "miné" very seriously, etc.

The Town Engineer, Mr. Girouard (pages 556 and following, Vol. 3), also refers to damages caused to the Highway Bridge. These damages were such that the bridge had to be rebuilt. He also states that there was so much ice on the public road following

the river, from the viaduct upstream, over a distance of a few arpents, that the Town had to spend $123.55 to clear the ice, and render the road passable.

Let us add to the above-mentioned witnesses the name of Mr. Lucien Brousseau, Division Engineer for the Respondent, who visited the site on the 11th of March, 1921, and who tells the Court (page 869, Vol. 5) that the ice was piled up to the top of the embankments. He adds (page 869, lines 28 and 29) the significant words: "Le seul temps ou je me rappelle avoir vu de glace pour nous y faire penser, ce serait en 1921 et en 1928". Evidently, therefore, he realized that in 1921 the embankment had been in danger.

The break-up in 1918:—

We cannot conclude this narrative of past and proven events, without referring briefly to an occurrence of very great importance which we found to have occurred on April 3rd, 1918.

At that time the Appellant had awarded to Morrow, Beatty & Company, the contract for the construction of its existing dam. Mr. Joseph Dick was the Engineer in charge of these works. Having arrived in Drummondville about the middle of March, he was preparing to commence work immediately after the break-up, and he naturally observed the river closely.

On the morning of the 3rd of April, 1918, he noticed that the break-up had taken place during the night and that the ice had been piled up on the embankment on the west side. He noticed at the same time that water had dug into the embankment a hole of considerable proportion and of sufficient importance to endanger the passage of the trains (Vol. 3, page 508, lines 30 and following).

He found this occurrence of sufficient importance to take a photograph of it, and this photograph has been filed as Exhibit "I". It may be easily seen that the damages were important, and one can realize that the Engineer, Mr. Dick, was right when he said that the damages were serious. Now then, it may also be seen that these damages were produced during a break-up of very small proportion, as evidenced by the small height reached by the ice.

And, Mr. Dick is a witness who is a stranger to the Appellant, and completely disinterested, as are also all our witnesses, with the exception (if we wish to believe it) of the officers and employees of the Appellant.

After having waged before the Judge of the first instance a long and hard struggle to prevent Mr. Dick from testifying, Respondent then attempted to diminish the value of Dick's evidence, with the help of Mr. Adolphe Toupin, foreman for the Respondent. The testimony of Mr. Toupin may be found in Vol. 5, pages 858, and following. Mr. Toupin first tells us that this washout on the photograph, Exhibit "I", is of small importance. He even claims on page 859 that it was caused by pedestrians going down to the river, and he repeats this assertion two or three times. But this witness is forced, in cross-examination, to admit that this hole was due to a stump which was resting against the embankment, around which the water had created an eddy which caused the washout ("lavage") (page 863). He also admits that if the water had risen to a greater height on that occasion, "elle aurait rachevé de laver le ballast tout le long" (page 865, lines 13 and following).

— — — — — —

The foregoing constitutes the evidence which we have submitted to the Court of the first instance concerning similar facts which occurred in the past at the site or within the near vicinity of the railway.

As it is up to the Respondent to show our responsibility, it seems indeed that our proof is more than sufficient to dismiss the mere presumption of facts resulting from the damages caused in 1928 to the railway bridge. It is up to the Respondent to prove, without a doubt, that the Hemming Falls Dam is responsible for the accident. And the evidence adduced by us of similar events occurring before the construction of the dam must be amply sufficient to attribute to acts of nature the 1928 break-up and its resultant consequences.

The Honourable Judge of the first instance seems to have been strongly impressed by the fact that the embankment washed out in 1928, had been in existence since the autumn of 1887, and that it had not been washed out before. (See notes accompanying the judgment, page 1095, line 50, and pages 1096 and following).

We respectfully submit that this is not an argument upon which one may reasonably lean. The embankment which was destroyed in 1928 was 90 feet long and 20 feet high. The aerial photograph, Exhibit "Z", shows this embankment very well. It was built of sand, clay and gravel (Dupuis, Engineer for the Respondent, Vol. 2, page 361, lines 18 and 19).

It did not have sufficient resistance to support much pressure from water and ice (Brousseau, another engineer for the Respondent, Vol. 5, page 872, lines 16 and following).

That the embankment resisted in 1915 and in 1921, and that it did not resist in 1928, really proves nothing. As stated by Mr. Brousseau, Engineer for the Respondent (page 872, in fine, and page 873), there are many other works along the railway which are destroyed at the given moment, after having resisted during many years.

At about 50 feet upstream from the embankment, there was a sort of rocky cliff, which created a sort of passage between the cliff and the embankment. Ice coming down the river could readily block this passage completely and pile up over the embankment to a considerable thickness, and the latter would thus be protected.

If, on the contrary, this passage should remain open, and if a strong current should be established therein and should then pass under the viaduct, it is obvious that the embankment would wash out ("se lavera"), according to the expression of witness Adolphe Toupin. In what way did the ice act in 1915, 1921 and 1928 ? Nobody can say. An accident occurred in 1928. But, previous to 1928, conditions had prevailed which had made this accident perfectly possible. And, as Mr. Lucien Brousseau, Divisional Engineer for the Respondent, said:—In 1921, there had been on the embankment enough ice "pour nous y faire penser". (Vol. 5, page 869, lines 29 and 30.) The clear inference from this statement of an expert witness of the Respondent is that he was really surprised that no accident occurred in 1921. Let us mention another fact which appears very important. An embankment such as the one destroyed in 1928 is covered with a certain coating of snow in the winter. In the spring the snow will disappear rapidly from the embankment on account of its exposure to the sun and its inclined form, permitting the sun to thaw out the frost formed during the winter. The time of the year at which the break-up takes place and the temperature which ob-

tains during the several days preceding the break-up must therefore play an important role. If the embankment is frozen deeply it will be very hard and it will almost certainly resist. If, on the contrary, the frost is gone, the embankment will be quite soft and far more likely to be washed out ("lavé") and disintegrated.

This is why the Appellant, in order to strengthen its case and to supply an explanation, which it was not bound to give, filed in the records Exhibit Z-25 and Z-26. Exhibit Z-25, based on meteorological observations, compiled at Ottawa for the Sherbrooke District, shows that in 1921, the break-up which occurred as early as the 10th of March, had been preceded by a relatively low temperature during the ten preceding days, while in 1928, the break-up which occurred as late as the 8th of April, had been preceded by a very much higher temperature.

Exhibit Z-26, based on the same data, gives a very clear and striking comparison for the years 1915, 1918, 1921 and 1928.

It is easy to ascertain from these exhibits that the two break-ups of 1915 and 1921 were preceded by low temperatures, and that, furthermore, they occurred at very early dates in the year, viz., the 26th of February and the 10th of March.

The break-ups of 1918 and 1928 were preceded by periods of comparatively high temperature in 1918 and very high temperature in 1928, respectively. They both occurred late in the season, viz., on the 3rd of April and 8th of April respectively. Now, in the case of the first break-up, (1918) serious damage was caused to the embankment, (see photograph, Exhibit "I"), although the flow was low and the water did not reach a high elevation at that time. In the case of 1928, however, with a flow greater than ever before recorded at the time of a break-up, the damages claimed in the present action were done.

Are we not justified in concluding, with reasonable certainty, that the above-mentioned facts give a very reasonable explanation of what occurred in 1928.

— — — — — —

Before closing definitely, this question of past occurrences, we deem it advisable to discuss an objection which Respondent has raised, in attempting to prove that the floods of 1915 and 1921 did not constitute strictly natural occurrences, but that the small dam, situated near the railway bridge and built by the Town of

Drummondville in 1896, was the principal cause of these break-ups, which we have proved, without contestation, to be of equal importance to the break-up of 1928. We shall analyse as rapidly as possible the attempt of the Respondent to prove that the abnormal elevation of water in 1921 was caused by the ice jamming on the small dam situated 1100 feet upstream from the railway.

Let us say first that we have proved, without contradiction, that a break-up of equal importance, if not of greater importance than that of 1928, occurred in 1887, when there existed no dam whatsoever, and not even any railway bridge. Let us add that this small dam at Drummondville was built by the Town in 1896, and that it is necessary to come to the year 1915 before any evidence of a very serious break-up can be found. If this small dam has modified completely the state of the river, why did it wait nineteen years before indicating, for the first time, the serious danger which it constituted, according to Respondent? Let us add that in 1915 witness Phillippe Hamel, who was on the railway embankment watching the river, saw a wall of ice and water coming down the river and passing without a stop over the dam and causing the damage mentioned in his testimony (Vol. 3, page 580). Let us mention also the testimony of Mr. Moisan, Mayor of Drummondville, who says that he has witnessed many break-ups and that the ice always passed over this dam very easily (Vol. 3, page 555). Let us also refer to the testimony of the engineer, Mr. McLachlan, principal expert of the Respondent, who says (Vol. 2, pages 286, lines 10 and following) that even under the worst conditions of break-up, this small basin located between the two dams would impound at the utmost 15,000,000 cu. ft. of water, a negligible quantity, according to him, which, therefore, cannot be considered as a cause of serious damage. In fact, the maximum flow in 1928 was more than 150,000 cu. ft per second. (The flow having been of the same magnitude in 1921, because the water rose to the same elevation) and the quantity of water mentioned by Mr. McLachlan would have flowed down within 100 seconds, and nobody would have had time to observe anything.

Let us analyze the special proof made by the Respondent in connection with 1921, and we shall easily see that this break-up was similar to the preceding ones. Insofar as Drummondville is concerned, the abnormal elevation of water was caused by the sudden flow of an enormous quantity of ice and water held by jams further up the river, and more particularly at the foot of the old Hemmings Rapid.

The first witness for Respondent is one Dame Proulx (Vol. 5, pages 877 and following). Coming back from Drum-

mondville with a child she stopped for a very brief time at Auguste Blanchette's, a tenant in the Dion's house, located approximately 200 feet downstream from the dam. She was barely inside the house when Blanchette shouted to his family to run for their lives, because the ice was coming down. This good lady, Mrs. Proulx, ran away by the back door of the house "without looking at the river" (to use her own words). She ran for one and a half arpents amidst water and frazil, or ice, until she reached a small elevation of the ground. It is then that she allegedly would have seen the ice blocked on the dam. But her testimony is perfectly clear on the fact that at that very moment there was an enormous quantity of ice piled up over all the ground in front of her and at the same elevation, naturally, as in the river. Blanchette's house was damaged and water and ice was flowing down in front of her (page 881, lines 28 and following).

We do not question the sincerity of this good lady, but we believe she only relates the opinion which she heard express a little later by other members of her family, whose testimonies we shall presently analyze.

Let us now refer to Noel Proulx (Vol. 5, pages 882 and following). He saw coming down the river an enormous mass of ice and water, which passed at a high rate of speed in front of his house. He was on the shore of the river and he then ran to his house, located 200 feet away. Just as he arrived, the ice began to pass, at the height of his windows. Now, when he says that, while in his house, four arpents upstream from the dam, and while the ice was up to the level of the windows, he could see whether or not the ice was going over the dam, located 4 arpents below, we claim that he expresses an opinion, but we cannot admit this testimony as lending any weight to the contention which the Respondent is trying to prove.

Furthermore, Respondent's attorneys have attempted, without success, to have Mr. Proulx state that the water was backing up, which would have been the case if their contention had been true. Noel Proulx, however, very definitely insisted that the ice was flowing down the river in front of his house.

The least we can say is that this witness confirms our claim, to wit: that the elevation of the water at the railway bridge was caused by the flow of a large mass of water and ice which had previously been held by jams further up the river. By reading Mr. Proulx's testimony which, as a matter of fact, is very similar to the story told by Mr. Phillippe Hamel in connection

with 1915, we are in a position to understand how such a break-up could cause the damages done in 1921 to the town pumping station, located near Mercure's Mill, and indicated on Plan, Exhibit Z-9. We will recall that the upstream wall of this building was of solid brick, one foot thick, and was broken down to a height of 7 or 8 feet, up to the roof. It is easy to realize that such damages could have been caused by an enormous wave of ice and water coming down the river, with great violence. It would be much harder to understand how such damages could have been caused if this high level of water, up to the roof of the building, had been due to a jam on the dam, downstream. Under this latter assumption, the water around the building would have been still, and no damages would have resulted.

Witness J. A. Gratton confirms Mr. Noel Proulx, when he says that he saw coming down the river a wall of ice, which was approaching the dam at the very moment he was passing, in his carriage, near the end of the dam to reach his home. After having covered in a great hurry, with his horse, the three or four arpents which separated him from his house, this wall of ice which was coming down the river had passed his place and the ice piled up to a height of 25 feet on the slope of his land (Vol. 5, page 894). Even though a lawyer could then manage to have this witness, as well as some others, say that the ice was stopped and piled up to a height of 10 or 12 feet on the dam, we are at liberty to question whether he saw the alleged occurrence clearly, or whether he was the victim of an impression, but, anyway, according to this witness, the ice piled up to a height of 25 feet at his house before reaching the dam. Therefore, there was no jam nor any backing up of the water.

It is hardly necessary to refer to the testimony of Dame Paquette, alias Gratton, who was with witness Gratton, and who tells us also that the ice was piled up on the dam. Her testimony is in Vol. 5, pages 886 and following. It will be sufficient to state that this good lady tells us that, after having unharnessed the horse, she and Gratton went over to the railway bridge, by walking along the edge of the woods, a distance of 13 or 14 arpents, and then (page 890) she noticed that there was much ice piled up on the highway bridge, situated 1400 feet downstream from the dam. And it is at this very moment also that she saw the ice at a standstill on the dam. It does not seem necessary to make any comments.

There is, in addition, Witness Arthur Proulx, who very seriously affirms that the ice was at a standstill on the dam and

was piled up to a thickness of several feet. But he also explains, no less seriously, that he was on the bank of the river at his house, more than 4 arpents upstream from the dam and while, according to him, this jam was forming on the dam, the ice in front of him, 4 arpents upstream, was not moving (Vol. 5, page 899, lines 39 and following, and page 900).

Later on he tells of, just as his brother does, on page 901, lines 22 and following, the coming of an enormous wave of water and ice, which forced him to run away or, as he says, ("à reculer, parce qu'elles nous aurait reculés.")

Is it necessary, after all this, to refer to Witness Johnnie Proulx (Vol. 5, pages 902 and following), who affirms that the ice was blocked on the dam, but that it was thus blocked for approximately only one minute (page 903, line 47).

Furthermore, this Witness Proulx gives us his opinion as an expert on the causes of floods, by comparing the conditions before and after the building of the dam, but he has lived on the bank of the river for slightly over thirty years, and the dam had been built for over thirty-six years at the time of the hearing.

May we add that the same witness, Proulx, who blames all floods on the dam, refers to the only other flood he ever saw, and at that time the ice came down the river freely without stopping at the dam. According to him, the ice rose to a very high elevation, if we may judge by the short story which he gives on page 904, lines 14 and following. And on page 905, he mentions, nevertheless, that the dam was built at the time of this other break-up of which he speaks.

— — — — — —

It would seem indeed that much willingness is required to find in such a proof the necessary elements to lead us to the conclusion that the dam built in 1896 by the Town of Drummondville has played any role whatever in the break-ups, of which we have given the story. May we add further that, according to the evidence, it is strange that nobody ever thought of complaining between 1896, when the dam was built by the Town, and 1914, when the dam was purchased by the Appellant. Apparently, up to the latter date, the dam had been perfectly harmless. It is very surprising that this dam, so harmless up to then, should suddenly become such a nuisance the moment it becomes the property of the Appellant.

We may note, in the evidence, a fact which might throw some light on this state of mind. Witness Eugene Dionne states (Vol. 3, pages 609 and following, that the house which he occupied upstream from Hemmings Falls had been built around 1904, or 1905, and that up to 1919 it had never been flooded. In that year, however, water rose from 6 to 9 feet above the floor of his house, and this condition continued for several days. Let us ask this one question: Suppose works of any description had been executed in 1918 to dam the river at Hemmings Falls, would not the 1919 flood, at Eugene Dionne's, have been attributed to this dam?

Take the case of the extraordinary flood of 1928, at Richmond. How many witnesses would have placed, in good faith, responsibility for this flood to a dam, should there have been one erected at Richmond in 1927.

As a matter of truth and common-sense, we can understand that people living along a river are exposed to inconvenience, of a more or less serious nature in any one year, but no one can ever predict in advance its gravity. They make very few careful and precise observations so long as they can only attribute this inconvenience to Providence. But let works of any description be done by a Company, against which recourse may be had, and it is only human that these people, from then on, will blame the inconvenience due to their situation along the river, to this Company and its works.

In order to better illustrate our contention, let us refer to a statement inadvertently made by witness Adelard Laprade, one of Respondent's witnesses, and one of those who have sued the Appellant in damages. During his main testimony (Vol. 2, page 215 and following), he affirms several times that the jams which used to form at Dauphinais', near his house, previous to 1925, were almost insignificant. And yet, when recalled by Respondent in Rebuttal, he wanted to show that the 1913 ice jam at Hemmings Falls was very large and that he had seen it very well, and so he tells us (Vol. 5, page 906, lines 41 and following) that he had come especially "par curiosité", "Parce que l'embacle d'eau "et de glace était considérable passé chez nous. J'étais curieux "de voir les dommages qu'il ferait en bas, au pont et aux habi- "tants, etc.".

It was evidently not an insignificant jam which had thus attracted Mr. Laprade's attention, and which had prompted him to travel six miles downstream in order to see the damages which

such a mass, in his opinion, would necessarily cause. In Respondent's proof, much stress has been laid on the fact that in 1928 roads were flooded. Yet, this did not occur only in 1928. The same Laprade, on page 907, tells us of the inconvenience which usually accompanied the break-up:—

"On se précautionnait de manger dans ce temps-là en cas "que le chemin vint à se boucher". (Page 907, lines 12 and following).

PART III.

HAD THE DAM NOT EXISTED, THE BREAK-UP WOULD HAVE BEEN MORE SERIOUS.

As previously stated, apart from anything that our experts proved, we have an argument of fact which seems irrefutable to prove the contention mentioned above. This argument has all the more weight as it is up to the Respondent to establish clearly our responsibility.

This argument is found in the clear and complete proof of former similar events, which occurred at the site of the railway bridge in 1887, before any dam was built, and in 1915 and 1921, before the Hemmings Falls dam was built.

And since, according to everybody's admission, the break-up in 1928 took place under exceptionally severe conditions, insofar as natural factors are concerned, viz., extremely high flow, without parallel in official statistics, extremely high temperature and very abnormal quantities of frazil, due to causes mentioned by us; it would seem that we would have the right to expect a more serious break-up than any previous one at the railway bridge. And yet, a clear and uncontradicted proof, has established that the elevation of water and ice at the railway bridge was not higher than it had been at the time of the former break-ups mentioned above.

Even if it had been proved that conditions were aggravated at the railway bridge in 1928, we would still have a good defence by claiming and proving, as we have done, the existence of circumstances and natural causes producing, along the entire course of the river, an aggravation of the usual damages often caused by floods.

But we have done much more. We have proved that, at the site of the railway bridge, the elevation of ice and water did not

exceed, in 1928, the maximum recorded several times in the past, during break-ups which were of lesser general intensity along the river.

Have we not the right to conclude, a priori, that we have already successfully disproved the accusation against us?

But we have done much more, and we have explained scientifically, and in a clear way, understandable to everybody, the various phenomena which occurred, and how the Hemmings Falls Dam, with its artificial basin, should be, and proved to be, a protection to property located downstream, inasmuch as it retarded the flow of water which, otherwise, without this high concrete dam, could have rushed down toward Drummondville more suddenly and caused damages far more considerable than those actually done.

— — — — — —

In order to prove our contention, we asked Mr. de Gaspe Beaubien, a well-known engineer, Mr. Arthur Surveyer, formerly president of the Engineering Institute of Canada, and Mr. Olivier Lefebvre, Chief Engineer of the Quebec Streams Commission, to indicate to us the facts which they personally knew, their findings, the result of their studies and their opinion on the entire proof offered by either party.

From these engineers, whose reputation has reached beyond the borders of our country, we have not merely asked for an opinion, based, solely, on the audition of the evidence adduced.

The Court will note, on reading their testimonies, that these gentlemen have made a careful study of the problems submitted to them and that their opinions and conclusions are based on serious and deep studies, and that they have compiled all the necessary data and official statistics, and, more especially, that their opinions and conclusions are in agreement with the facts and with the testimonies of numerous and, for the most part, disinterested witnesses.

We do not think that the Court will ask us to analyze their testimonies. They have discussed problems which are sometimes rather difficult to understand by laymen. While they have succeeded, we believe, in conveying their meaning in clear language, deprived of technical intricacies, it is not certain that we could succeed in being as clear as they have been. We must content

ourselves with referring to their testimonies, which are contained in Vol. 4 of the record, together with the very important evidence of Mr. J. F. Roberts, one of the Appellant's engineers, who, basing his evidence on well established findings, has explained in a very clear and rational way, how the absence of the Hemmings Falls Dam, would undoubtedly, have contradicted to the aggravation of conditions at the railway bridge.

— — — — — —

Before discussing in some detail certain problems raised by our experts, to explain their conclusions, let us mention that Mr. Beaubien restricted himself more especially to a study of the various jams which were produced along the river, and he explained their formation, their travel and their importance, and indicated the enormous concentration of ice and water which these jams produced a mile and a half upstream from the dam. He explained the normal causes of their stopping and of their starting, and he concluded that the dam is not responsible for these occurrences, and that, if it had not existed, the conditions would probably have been more serious downstream.

Messrs. Surveyer and Roberts have explained, in a fashion which appears perfectly clear, the moderating role played by the dam, in diminishing the maximum flow and distributing over its large artificial basin the masses of water rushing down from upstream, thus retarding the flow of this water and protecting property situated downstream from the dam.

Mr. Lefebvre, in his first testimony (Vol. 4, pages 715 and following), supplied a mass of official data and filed a number of exhibits, giving much similar official data. Later (Vol. 4, pages 793 and following), he gave his opinion as an expert on the facts which he had personally ascertained, and he established, in a way which seems irrefutable, that these occurrences are nothing but natural ones, even though they do appear very extraordinary to Messrs. Mercure and others, who have studied these occurrence with the idea of preparing their claim in damage against the Company. His conclusions are identical with those of the other engineers, and his testimony, which is short and precise, is based on a perfect knowledge of the facts. In cross-examination, more particularly, he gives us, always in a way most easily understood, a mass of information which makes us realize why this man, who should undoubtedly be classed among those who understand these problems best, is able to reach

a conclusion as easily and categorically as he does. It would seem indeed that the testimonies of Messrs. Lefebvre and Surveyer alone should be sufficient to convince. In reading them it will be seen, in addition, that they agree with a mass of facts proven by a large number of witnesses and that they also agree with the findings accurately recorded by the Appellant's Engineers over a period of years.

— — — — — —

Insofar as laymen are concerned, it would seem that the best way to find whether these testimonies are serious and must be believed is to look at them from certain angles more easily understood than others and to see if, in this light, they appear reasonable and truthful. It may then be easier to admit these testimonies as a whole once it is recognized that they successfully answer certain objections which may readily present themselves to the mind of a layman and appear to him as "common sense" objections, although the expression "common sense" represents an individual opinion oftener than it represents anything else.

For instance, the Court will note that the Respondent tried to blame the formation of the Dauphinais' ice jam to the lack of current in the river below this ice jam. Respondent's witnesses laid stress on the reduction in the speed of the current in the basin, resulting from the increase in water level created by the dam and in their testimonies they often refer to "l'eau morte du bassin." (still water of the basin). This point was raised more particularly with the help of witness Adelard Laprade, who was supposed to impress the Court considerably, because he has lived near the Dauphinais Rapid for twenty-five years. Laprade formulates an argument which, to him, appears uncontrovertible. Before the dam, he says, there might have been ice jams, 6 or 7 feet high. But now it is different. "Avant la dam (Page 219, Ligne 23) il y avait un gros courant, et là, on n'en a plus."

This argument may appear serious, and it appears to have impressed the Honourable Judge of the first instance to a great extent. In fact, when the engineers explained to the court that with a regular stream flow of over 40,000 cu. feet per second, as was recorded on the 6th, 7th and 8th of April, 1928, the dam ceases to have any effect whatever on the elevation of the water or on the speed of the current in the Labonté-Dauphinais basin, the Honourable Judge appeared sceptical. And he states clearly enough in his judgment that he was sceptical (Vol. 6, page 1105,

lines 24 and following). After having referred to this proof of our engineers, he concludes with these words "I must candidly admit that I was surprised at this statement."

Nevertheless, the above fact cannot be denied, and we believe that it may be proved easily. It is true that during low water periods and with the sluice gates closed, the basin formed by the old Hemmings Rapid, is filled up and that the walls of the dam, with flashboards on, can maintain water at elevation 318, which is the average level in the summer.

Let us now suppose that the artificial basin is full and that the rainfall increases the regular flow of the river to 20,000 cu. feet per second. By opening a sufficient number of sluice gates to the proper extent, this increase in flow will be taken care of without allowing the level to increase by a single inch in the artificial basin. If the regular flow increases to 40,000 cu. ft. per second, the sluice gates are open somewhat more, and the level is still unchanged.

Now, in the springtime, before the break-up, the flash-boards are removed from the spillway and, as there is no danger of a water shortage for a certain period of time, the water level at the dam is maintained between 315 and 316. By referring to the former gauging station of the Quebec Streams Commission at Labonté's we find that this level corresponds to the level reached by the water at that station, when, under natural conditions, the flow is 40,000 to 50,000 cu, feet per second. In other words, the natural elevation of the water at Labonte's, when the flow reaches, or exceeds 40,000 cu. ft. per second, is the same as that artificially maintained by the dam, by closing the sluice gates during low water periods. Therefore, in the Spring, as soon as the flow reaches 50,000 cu. ft. per second, it is immaterial whether or not the dam is there insofar as the stretch of the river between the hogback and Dauphinais' is concerned. The elevation of the water is the same, with or without a dam, and the speed of the current is consequently also the same in this entire section of the river.

This clear explanation contradicts completely the opinion of persons, who may speak in good faith, but who do not know all the factors involved in the problem, and who are naturally likely to commit errors which may be serious, such as the one they committed in blaming the jamming of the ice at Dauphinais' on the 7th of April, 1928, on the lack of current in the river.

And now, insofar as the Dauphinais ice jam of 1928 itself is concerned, is it a fact that this jam was so very different from those which used to form in the past, nearly every year, according to Mr. Laprade (Vol. 2, page 224, lines 19 and following) ?...

He claimed that ice jams in the past were 6 or 7 feet high. Let us say however that he did not give any estimate of the height of the 1913 jam, which had been important enough, opposite his house, to induce him to travel six miles over bad roads solely for the purpose of finding out the damages which this mass of water and ice should, in his opinion, necessarily cause to the bridge and to the inhabitants (Vol. 5, page 906, lines 41 and following.)

Let us add that Laprade, of his own admission, hardly ever made any other observations, other than to glance at the river from the windows of his house, in the years precedings the building of the dam.

Let us refer to the height of 6 or 7 feet which he gives to these jams in the past, and let us see if the difference was very great.

Mr. Mercure, Respondent's principal witness, whose testimony seems to be accepted by the Judge of the first instance, speaks to us of a jam, 20 to 25 feet in height, located slightly upstream from Dauphinais', on the 7th of April, before 4 o'clock in the afternoon (Vol. 1, page 83, lines 29 and following). Adelard Cusson, who was with Mercure at the time corroborates him (Vol. 1, page 146). And the Honourable Judge of the first instance seems to admit these affirmations as true (Vol. 6, page 1066, lines 10 and following.)

Since at that moment the Richmond jam had not arrived and since the water was approximately 6 feet lower than it was somewhat later in the afternoon (Mercure, Vol. 1, page 85, and Cusson, Vol 1, page 148), the above-mentioned figures appear impressive and they may have impressed the Judge, who has admitted them as exact. Let us, however, see what the truth of the matter is in the light of real facts, rather than in the light of an exalted imagination.

Plan, Exhibit 65, shows that with a clear water flow of 60,000 cu. ft. per second in the river, the elevation of the water at Island No. 71, is approximately 323. With ice in the river, the water level is bound to rise, and the above-mentioned elevation should be increased to, at least, 325 for the same flow. Now, in

the afternoon of the 7th of April, 1928, the flow in the river was 63,000 cu. ft. per second. (McLachlan, Vol. 2, page 288). (The stenographer has indicated 83,000, but the correct figure is 63,-000). Since the water reached the maximum elevation of 336 at Dauphinais' and since it was 6 ft. lower when Messrs. Mercure and Cusson arrived near the jam, this means that the level was then 330 and that the ice jam had a height of 5 ft. at that time, instead of 25 feet.

We believe it is advisable to point out to the Court this exaggeration of Messrs. Mercure and Cusson, so that the Court may assess their affirmations at their proper value. It is true that somewhat later the jam increased in height and that the water level reached its maximum. But if it is admitted, as it certainly will be, that it is the arrival of the Richmond jam which has aggravated the Dauphinais ice jam, and if we recall that upon the arrival of this jam from upstream, an artificial flow of more than 150,000 cu. ft. per second was created, as admitted by the experts of both parties, and if we take into account the increase in level which such a wave of ice and water was bound to produce in the river, we are then able to gauge the true proportions of the Dauphinais jam.

We will therefore readily understand that Messrs. Mercure and Cusson, not knowing the extraordinary regular flow of the river on that day and judging only by the height of the water in the river, have blamed this high water level to an ice jam only, without realizing that even without this ice jam, the water would have been almost as high at that moment.

It would seem therefore that we should conclude that it is impossible to correctly assess these occurrences without having recourse to the knowledge of experts and especially to the official data which they are able to supply and which they have furnished in considerable quantity in the record.

By reading the testimonies of the experts and comparing them the Court will easily note that it seems logical to conclude, as our experts have done, that the flow of the jam without a stop in a river in the natural state on the 7th of April would have been just as disastrous, and probably more so, for the Railway as the flow of the Labonte ice jam on Sunday, April 8th. Admitting for the sake of argument that the dam is responsible for the stoppage of the jam at Labonte on the 7th. of April (toward the end of the afternoon) the following facts remain unchanged and bear out admirably the theory of our experts:—

1st—Of the mass of water concentrated at Dauphinais and which moved at 4:13 P. M. a part only went down as far as the dam, a large proportion being retained in the lower part of the Labonte-Dauphinais basin together with the entire mass of ice which formed the Labonte ice jam.

2nd—This portion which was not held upstream by the basin and by the labonte jam was nevertheless of sufficient importance to create at the dam on the evening of the 7th. of April an artificial flow of more than 120,000 cubic feet per second.

3rd—While this flow of 120,000 cubic feet per second was passing through the gates and over the spillway, and enormous quantity of water was being held back by the large concrete dam apart from the quantity of water and ice held back by the Labonte jam.

— — — — — —

In the light of these facts it seems more than reasonable to say that the coming down of the Dauphinais jam without stopping and without the dam would have caused on Saturday evening a larger flow than that recorded on the 8th of April at 3 P. M.

It is because the respondent has realized this point as well as we, that he has made frantic attempts to show that the Dauphinais jam was caused by the dam and that, with the river in its natural condition, this enormous concentration of water and ice would not have taken place. And the Court will note by reading the testimonies the efforts made by the Respondent and by all those who, like him, have claims for damages, to make us believe that the conditions affecting the formation of ice during the winter have been completely changed since the construction of the dam with the result that the spring break-up is far less easy and is apt to cause far more serious damages.

To prove this Respondent had recourse, as usual, to Messrs. Mercure, Cusson and Laprade. He has also added the opinions of Ernest Labonte and Raoul Bahl, and the explanation of the all-embracing expert Seraphin Ouimet. Insofar as this latter gentleman is concerned we wish to say but little since we have not been able to understand anything from his very involved explanations. If he is an all-embracing expert, as he seems to claim, he certainly does not possess the gift of clarity and we admit that we are unable to follow him in his involved explanations wherein every question is mixed at the same time.

Let us return to the other witnesses of the Respondent. They admit first that before the dam was built they had made no study of the river, nor any serious observations and that their only knowledge of the phenomena, which they claim to compare, results from glances at the river while following its shores or when, occasionally, they had to cross it. (Mercure, Vol. 1, page 99, lines 34 and following) (Cusson, Vol. 1, page 157) (Ernest Labonte, Vol. 1, page 141, line 25 and following) (Adelard Laprade, Vol. 2, page 244, line 38 and following).

Nevertheless it is these witnesses who compare the conditions before 1925 to those existing since that time. These witnesses tell us that since the dam was constructed the ice in the Labonte-Dauphinais basin is much thicker than it formerly was and that an enormous quantity of frazil now accumulates therein, while none was there formerly. And as a consequence, they state, the spring break-ups have now become more dangerous.

Since the Honourable Judge of the first instance has ignored the testimonies of the experts, it is evidently upon the above-mentioned witnesses which he relies to reach the same conclusions as they do and accept all their contentions, as he says himself. (Vol. 6, page 1076 in fine, pages 1077 and 1078). And on the latter page the Honourable Judge concludes as follows:

"This long and wide basin of deep and still water from the dam up to Labonte's is, in my opinion, an ideal vessel, to use the witness' (Mercure) own expression, for the formation of ice and the accumulation of frazil.

Mercure had used (Vol. 1, page 107) the comparison of a pail, in which water is placed, and which freezes over night, while a river, with a fair current, will not freeze.

It seems to us indeed that this is not dealing with such an important problem with sufficient seriousness. So long as all the water in the river is not cooled down sufficiently to freeze, no surface ice will be formed, no matter at what temperature the outside air may be, and the deeper the water, the longer it will take for it to reach the necessary temperature of approximately 32° Fahr. (Lefebvre, Vol. 4, page 797).

It is obvious, therefore, that a small quantity of water placed in a metal pail, will cool down very quickly, due to its exposure on the surface and its contact with the metal of the pail, which is a good conductor of cold, and that the water will

freeze during a cold night. It is quite possible that during the same night all the water in a river may not have time to cool down sufficiently. This problem must be considered as a whole, as it concerns the formation of ice over an entire winter, and is not merely a question of the formation of ice over a period of 24 hours.

This question of the formation of ice and frazil has been studied thoroughly for many years. Federal and Provincial Governments have for many years established and maintained observation stations, where experiments were made and measurements taken every day and often several times a day. The results are compiled in meteorological reports and other publications at Ottawa, and in the reports of the Quebec Streams Commission in the case of the Province of Quebec.

When the St. Lawrence Waterway project was first considered many problems presented themselves, one of them being to find out what effect the projected works would have on the formation of ice and on the spring break-ups. Various Commissions of Engineers studied these problems with great care for several years. These studies covered territory located at the same latitude as that covered by this case.

Both Mr. McLachlan, principal expert of the Respondent, and Mr. Lefebvre, expert for the Appellant, were members of the Commission which prepared the report, an extract of which is filed as Exhibit 41. The contentions held by our experts in the present case, in connection with the formation of ice and frazil, had already been held by them in the Labonté and Dauphinais cases, and it can be seen that Mr. McLachlan made a thorough study of the testimonies then given.

Let us ask this simple question:—Where can we find in Mr. McLachlan's testimony anything which contradicts what our experts have contended in connection with the formation of ice during the winter, the formation of frazil and the way in which it behaves in rivers and the obstructions and harm which it causes? And, therefore, on what ground can anybody set aside the opinion of experts such as these various engineers, opinions based on personal studies and findings, opinions concording with findings made throughout the country, and on what ground can anybody admit, instead, the opinions of Mr. Mercure and his employee, Adelard Cusson, who have, on these subjects, no competence or experience, other than the very restricted observations they might have made on two or three occasions in the last six years under ridiculous conditions, as we shall see.

For instance, Mr. Mercure expresses the opinion that the ice in the Labonté-Dauphinais Basin must be thicker than it used to be in the past, but he never took any measurements, and, furthermore, he is contradicted by Mr. Olivier Lefebvre, who explains that official observations have destroyed the belief, existing in the past, that the ice, over lakes without current must necessarily be thicker than that in rivers. (Vol. 4, page 798) He naturally makes exception in the case of sections of rivers where the current is sufficiently fast to prevent the formation of surface ice. Pronounced rapids would be in this category. Now, the Labonté-Dauphinais Basin, before the construction of the dam was a basin of still water, where the slope was only 4 inches in a distance of three and a half miles. Mr. Mercure, furthermore, is contradicted by the observations made by the employees of the Appellant since the construction of the dam. At intervals of fifteen days, the thickness of the ice is checked and frazil formations recorded, and it may be seen from the testimonies of Melvin Rutherford (Vol. 3, page 468 and following) and George Kitson (Vol. 3, pages 452 and following), that great care is taken in order to obtain data which is exact and which represents correctly the conditions existing on the whole surface of the river.

A record of these observations had been filed as an exhibit in the Labonté-Dauphinais cases. It was therefore easy to verify them and prove their inaccuracy (if they were inaccurate). But they have not been contradicted in the present case, nor were they contradicted in the preceding cases. Furthermore, these observations were verified by several engineers and, in particular by Mr. Lefebvre, on the 27th of January, 1929. (See plan, Exhibit 21, and Lefebvre's testimony, Vol. 4, page 807.

At any rate, as we have already mentioned, the ice was measured by Ernest Labonté himself, in March, 1919, opposite his house, near the gauge of the Quebec Streams Commission, and it was found to be 31 inches thick. While surface ice as thick as that has never been found in the basin since the construction of the dam, we would not claim that the dam has had the effect of reducing the thickness of ice formed in winter. This argument would not be serious. But neither can we consider as serious the argument which contends that since the current is somewhat slower, the ice must be thicker than in the past in the Labonté-Dauphinais basin. Since it is proven, without contradiction, that in the past the current was slow enough to allow surface ice to form, the thickness of the ice, since the construction of the dam, depends only on the temperature, over which nobody has any control.

Let us now deal with the formation of frazil in winter and with its accumulation at the foot of rapids in which it forms, and with the obstructions which this frazil may cause in the spring at the time of the break-up.

The question as to whether the construction of the dam had any effect on these frazil formations and accumulations has naturally been one of the most contested points in the case.

It is admitted that pronounced rapids, over which surface ice does not form in the winter, produce an enormous quantity of frazil.

To appreciate this fact, let us refer to the testimony of Mr. F. F. Griffin, who was in charge of construction at that dam during the winter of 1923-24. Preliminary work was begun during that winter and, naturally, then engineer in charge kept a close watch on the river and on the ice formation, since the construction plant was exposed to be flooded by an excessive rise of the water.

Hour by hour, and day by day, he took notes of the occurrences in the river and he gave us a summary of his observations on pages 630 and following in Vol. 4. This story, told by an experienced and competent witness, who personally saw these occurrences, confirms perfectly the explanations of our experts, explanations which are also based on personal observations and experience.

It will be noted for example, in Mr. Griffin's testimony, that the masses of frazil coming down the rapid accumulated at the foot of the same rapid, several hundred feet downstream from the present site of the dam. This frazil accumulated on the rocky ledges at that spot and covered them up. At the same time it also accumulated under the end of the surface ice, located downstream. After several days, over a distance of 1600 to 1700 feet, the surface ice was raised by these accumulations of frazil underneath and formed noticeable protuberances, referred to as "craters," the expression of witness.

And naturally, as this rapid was considerable, and as it formed frazil in enormous quantities, during practically the entire winter, a part of this frazil necessarily had to go downstream further and further, and finally a large proportion of the basin between the two dams became filled up with this frazil form-

ation. In this fashion and depending on temperature conditions, this basin might become filled up over a large area, as actually happened during the winter of 1921. (See plans, Exhibits Z-9, Z-10 and Z-11, and testimony of Joseph Bouliane, Vol. 4, page 689 and following.)

The frazil, after having accumulated at the foot of rapids in a very large quantity, and after a part of it had also spread out under the surface ice of the basin, then built up in an upstream direction during very cold days. This upstream formation in the rapids themselves, together with bordage ice, might cover the entire rapid. A rise in temperature would loosen all this ice which would then come down the rapid and accumulate at its foot to aggravate the obstruction already created. This phenomena might be repeated several times in the course of a winter and finally, in the month of March, the rapid might be completely frozen (See photo at the top of the page, Exhibit "N."). And in the spring, when the temperature became milder, this accumulation of ice over the rapid came down and accumulated on the rocks at the foot of the rapid to form, what appears on the photograph at the bottom of the page, Exhibit "N."

There is no reason to be surprised if, during break-ups the ice from upstream comes down and stops on the aforementioned formations, which are already very solid and forms very serious ice jams such as those which have contributed, to a great extent, in causing the damages recorded at Drummondville in the past. This cause of damages has been eliminated by the construction of the dam, a point to which we will refer again.

If we have referred more particularly to this testimony of Mr. Griffin and to this gentleman's observations it is principally to help us in our study of what occurs now and what occured in the past at the Dauphinais Rapids. This Dauphinais Rapids, in its natural state, had a drop of 12 to 15 ft., over a comparatively short distance. While it was of lessor importance than the Hemmings Rapid, nevertheless, it formed a very large quantity of frazil. And just as in the case of Hemmings Rapid, there was at the foot of the Dauphinais Rapid a basin of still water, where the current was low, extending over a distance of three and a half miles down to the head of Hemmings Rapid at the hog-back.

The frazil produced in the Dauphinais Rapid used to accumulate at the foot of the rapid and to extend also under the ice

of the basin for a certain distance and produce protuberances in the ice, or craters. This formation took place around the numerous islands which dotted the river at that spot, and created an ice formation that was far more resistant than elsewhere.

If a higher temperature, or an increase in the flow, broke up the comparatively thin ice upstream from this formation, this ice came down and stopped on the stronger formation at the foot of the rapid. Additional ice coming would finally accumulate along the rapid in the shallow water and there would thus be created these formations of broken ice resting at the downstream end upon the accumulated frazil deposits and reaching back upstream over long distances in the rapid.

These accumulations of ice solidly formed during the first part of the winter, are further reinforced by melting of snow, rises in water level and thaws, followed by cold temperature, and finally form compact masses, reaching, at places, the bottom of the river, sticking to rocks and to bottom iregularities, and forming, in the spring, a barrier of great solidity, preventing or retarding, for some time, the flow of the ice from the upper reaches of the river.

This is why, in 1924, before the erection of the dam, Mr. Griffin was able to see on the river, at the foot of the Dauphinais Rapid, the accumulation of broken and piled up ice shown on the photograph at the top of the page in Exhibit "Q". And naturally, the photograph only represent part of the river and only part of the ice formation existing at that place. It is necessary to refer to the explanations given by Mr. Griffins to fully understand the importance of this formation (Griffin, Vol. 4, page 634 and subsequent pages). For a distance of approximately 1600 feet at the foot of the rapid, the ice was raised and formed craters, caused by the pressure of the frazil. Upstream from this there was the broken ice which had come down the rapid during the course of the winter, and which had stopped on the formations of frazil and solid ice. This formation was spread over the whole width of the river and for a distance of approximately one and a half miles. We therefore have there, in a lesser degree, the same formation as that which appears on the photograph at the top of Exhibit "N" (Hemmings Rapids covered with broken ice on the 14th of March, 1924).

It is on this ice and frazil, accumulated during the course of the winter, that, in the spring of 1924, ice from upstream came

down and stopped, the whole forming a jam which raised the water level to elevation 327 although the flow was only 15,800 cu. ft. per second at the time.

As regards the conditions of the river, at the foot of the Dauphinais Rapid before the erection of the dam, we also have the evidence of Melvin Rutherford (Vol. 3, page 480, line 10 and subsequent lines), referring to his fairly numerous visits on the river during the winter, at that place, before the erection of the dam, and wherein he tells us what he saw in the past and wherein he also tells us that there is no difference between the present conditions and those which formerly existed.

— — — — — —

In another respect, in order to establish his contentions, Respondent had recourse, as usual, to facts, which were alledgedly ascertained by Messrs. Mercure and Cusson. These gentlemen took soundings where there was an accumulation of broken and piled up ice, apparently similar to the ice which we see on the photograph filed by Mr. Griffin, and which appears at the top of the page, Exhibit Q. For the purpose of their tests they chose the highest spots that they could find on the river. One can easily understand that, owing to the pronounced depressions which can be found in a rapid, there are certain spots in the river where ice floes, broken up during their downward course, will pile up in heaps extending to the bottom of the river and often rising considerably above the average surface. It is at these particular spots that Messrs Mercure and Cusson took their soundings, and this is why they can affirm that at each sounding indicated on plan, Exhibit 22, the ice reached the bottom of the river. Evidently, they did not take their soundings where the river flowed under the ice formation, or if they have done so, these soundings are not shown on plan, Exhibit 22. They were anxious to find something that looked very serious, and they acted accordingly. Thus they allegedly found pieces of ice piled up on top of one another, the space between them naturally being filled with frazil, reaching a thickness of 15 to 17 feet.

Their tests, findings, and their methods, are in the record. (Mercure, Vol. 1, page 114, s. pages) (Cusson, Vol. 1 page 160 and s. pages.) Moreover, measurements like these, taken by means of a round steel bar, 1″ in diameter, were verified by one witness only since Mercure, as far as he was concerned, just lowered this bar at the bottom of the river through holes which had been made the day before when he was not present. (Mer-

cure, pages 119 and 120). At any rate, we wish to point out that the soundings taken by Messrs. Mercure and Cusson were all taken on a line which closely coincides with the accumulation of ice existing in 1924 and appearing on photograph, Exhibit Q., at the top of the page. And if we look at the curve in the river, as shown on the plan, Exhibit P, it is not surprising that the ice flowing down the rapid should naturally follow this diagonal formation in its piling up.

But other visits were made on the river during the course of the same winter. The Engineers, Griffin, Dunfield and Lefebvre, went there to make tests and take soundings, and they also inspected the river, on the ice, right up to the Island (No. 71), and the Court will see by Mr. Olivier Lefebvre's answers to Respondent's attorney's questions, that this ice formation, which appears to have surprised Messrs. Mercure and Cusson, seemed to be quite natural to an engineer accustomed to such phenomena, and who expected to find such formation in such places. (Vol. 4, pages 807, 808 and 809).

The findings of the above-mentioned gentlemen, consisting of a series of soundings, as indicated on plan, Exhibit P., and described in detail in Mr. Griffin's testimony (Vol. 4, page 643), are not soundings made only from the top of accumulations of ice floes piled on top of one another, but rather, they consist of two lines of soundings made at regular intervals over the whole width of the river. This method is obviously the only exact and intelligent way to take such soundings. It may be seen from the results of these soundings that conditions vary greatly, from point to point along the river, and that the soundings were made with the idea of giving a true picture of the state of the river, and not with the idea of preparing a set of exaggerated figures for purposes of Court evidence.

Both in the evidence adduced in the Court of first instance and in the pleas of his attorneys, the Respondent has attempted to create the impression that, since the construction of the dam (accompanied by an increase of 9 feet in water level), the current is so much slower than in the past, that the frazil has a much greater tendency to stop at that point. According to Messrs. Mercure and Cusson, the frazil produced in the Dauphinais Rapid, prior to the construction of the dam, came down the entire river, and did not stop at the foot of the Rapid, while now, according to them, it accumulates in its entirety and constitutes a serious obstruction in the river.

And Mr. Ouimet, who has been since 1928, and is still, an inspiration to witnesses Mercure and Cusson, has attempted to convey their opinion in the form of a scientific formulae in his second testimony, in Vol. 2, pages 324 and following). On page 324, lines 44 and following, he first states the following:

"Le barrage de la compagnie a eu pour effet de "changer la stabilité de la rivière, pour une grande dis- "tance en amont, et une certaine distance en aval, stabi- "lité bien connue des riverains. La nature parlait assez "éloquemment, la disposition des bâtisses, le long de la ri- "vière, autrement dit, les riverains connaissant sa condui- "te depuis très longtemps, etc."

He naturally neglects to tell us of what this stability consists, and in what respect it may concern this case.

Further on, on page 326, after having suitably intermixed a certain number of technical terms, he admitted that frazil jams used to form at the foot of Dauphinais' rapid prior to the construction of the dam, but he claimed that these jams were formed lengthwise, "suivant la veine liquide" (which apparently indicates the whole width of the river, and which, therefore, would also indicate a crosswise jam), and he further claimed that he had all the necessary figures to back this supposedly scientific truth. Nevertheless, when Appellant's attorney ask him the following question: "Avez-vous fait des calculs?" he answers, with much assurance:

"Oui, la dynamique nous l'enseigne."

But, frankly, what relation may dynamics have to the accumulations of frazil.

Further on, on page 328, after having strenuously claimed that there is now no current whatever in the river at that point, on account of the construction of the dam, he then goes on to speak of the speed of the current causing erosion.

On the same page 328, line 40 and following, he does not fall very short of trying to make us believe that, in winter, the frazil travelled down the river as far as the St. Lawrence:

"Comme on le sait (ligne 44), les rivières prennent "soin de leur frazil, parce que de leur détritus, elles se "forment de cette manière-là depuis l'époque géologique.

"La formation de terrain peut aller jusqu'au fleuve. Si "elles n'avaient pas transporté ces détritus, il n'y aurait "pas eu de rivière."

After several pages of the same sort of information, wherein scientific or supposedly scientific terms are suitably mixed with vague data, this good Mr. Ouimet, the expert adviser of Messrs. Mercure and Cusson, concludes a part of his testimony in a way which matches the rest in seriousness (page 334). Called upon to give his opinion on the fact that, according to Mr. Cusson, the ice formation in the Spring of 1929 was far more serious than in 1928, and on being asked to explain why, in the face of these facts, the 1928 break-up should be so severe, while that of 1929 should be insignificant, in spite of much more dangerous ice formations, Mr. Ouimet explained, with much seriousness, that the cause of this apparent inconsistency must have lain in the fact that in 1928 it started to rain while he (Ouimet) was on the ground, around 3 o'clock in the afternoon. After this, we do not think that it is necessary to make any further analysis of his testimony.

In answer to the testimonies of Messrs. Cusson and Ouimet, and notwithstanding what we have already demonstrated as to the conditions prior to the existence of the dam, we shall refer to the testimony of Mr. McLachlan, Respondent's principal expert. In his main testimony (Vol. 2, page 288), Mr. McLachlan says that frazil deposits at the foot of each rapid:

"There must have been considerable volumes of fra- "zil deposited at the foot of the Ulverton Rapids and at the "foot of what the Dauphinais rapid, but the quantity was "not in comparison with other years very excessive."

He was speaking of conditions in 1928, and nowhere in his main testimony, nor in rebuttal, does he contradict a single word of what our experts have explained, viz.:

1st. Frazil always accumulates at the foot of each rapid so long as there is surface ice on the basin downstream to stop it.

2nd. The decrease in the speed of the current creates no difference whatever, inasmuch as the current in the basin was already slow enough to allow the frazil to accumulate, and inasmuch as it has been proven that a sheet of surface ice always covered that basin in the past;

3rd. Due to the increase in water level in the Labonté-Dauphinais basin, at least two-thirds of the Dauphinais Rapid have been drowned out, with the result that the production of frazil in what remains of the rapid is considerably smaller than in the past.

4th. The conditions existing in the past at the foot of the rapid have not been changed, but merely displaced and moved upstream along the river, the basin having been lengthened at its upper end, and the foot of the rapid having been moved upstream.

5th. In this new section, that is to say, at the new foot of what remains of the Dauphinais Rapid, the phenomena now occurring are exactly similar to those occurring in the past.

Surveyer, Vol. 4, pages 785 and following.

Lefebvre, Vol. 4, pages 804 and following.

— — — — — —

The only argument which Mr. McLachlan submits in rebuttal (Vol. 5, page 941) is one in which he assumes a winter, during which the flow of the river is so great that the river does not freeze over anywhere along its course, a condition which has never existed, as witnesses on both sides have testified. Under these conditions, he assumes that all the frazil manufactured in the entire river, from Windsor Mills down, flows down the river, which is in its natural state, and accumulates at the foot of Hemmings Falls, in the basin, betwen the two dams. He, therefore, assumes that this basin would be frozen over, but why, we do not know, and he does not explain.

He disagree also with our figure of 30,000,000 cu, ft. of frazil given by Mr. Surveryer as the amount formed in Dauphinais' Rapid during an entire winter. Nevertheless, Mr. McLachlan admits that Hemmings Falls Rapids, in their natural state, formed as much as 13,000,000 cu. ft. of frazil per day, and in view of this admission, our figure of 30,000,000 cu. ft. per winter in Dauphinais' Rapid, does not appear exaggerated.

But in none of his evidence does he contest any of the statements made by our experts, and referred to in detail above, except with this impossible hypothesis, which has never been realized at any time.

These latter explanations complete the previous ones, which we have already given, and agree perfectly with what we have proved as to facts existing in the basin, either at Hemmings Falls or at Dauphinais' Rapid. We therefore believe that we have submitted a perfect and complete proof, to the effect that the construction of the dam has not increased the tendency for the ice to jam at Dauphinais'.

— — — — — —

Now, therefore, have we not the right to say that the construction of the dam has considerably improved conditions in the river, insofar as Respondent's property is concerned, on account of the elimination of Hemmings Rapids.

Mr. McLachlan, Respondent's principal expert, who is supposed to have special experience on this question of formation of ice and frazil, stated, as mentioned above, that frazil was being formed in Hemmings Rapid at the rate of 13,000,000 to 14,000,000 cu. ft. per day. He estimated that this formation of frazil could not last for more than ten days during a normal winter. (Vol. 5, page 943). Therefore, he assumed a total quantity of approximately 100,000,000 cu. ft. while still admitting a figure of 140,000,000 for the year 1921. As a matter of fact, it appears from Mr. Griffin's observations during the winter of 1923 to 1924 that this frazil production can last much longer than ten days. But let us not dispute this point, and let us take the figure of 140,000,000 cu. ft. which is still fairly large quantity.

If it is true, as claimed by Mr. McLachlan, that the Dauphinais Rapid produced, in its natural state, only 15,000,000 cu. ft. of frazil, and if this quantity is now reduced to one-half, on account of the reduction in the length of the rapid, and if this reduced quantity is nevertheless capable of causing at least a part of the inconvenience which Messrs. Mercure, Cusson and Ouimet attribute to it, what can one say about the inconvenience which was created by the frazil formed in Hemmings Rapid under natural conditions ?

Mr. McLachlan contradicted, in advance, Respondent's own witnesses, who have attempted to blame the serious break-ups of 1915 and 1921, and the high water elevation accompanying these break-ups, on the small dam at Drummondville. Mr. McLachlan contradicted these witnesses when he says, several times, and when he repeats again in rebuttal (as if to contradict Res-

pondent's witnesses even more and to prove that they had been the victim of an optical illusion, if they had seen anything at all) that this three-mile long basin at the foot of Hemmings Rapids is an "ideal receptacle provided by nature" to store the ice and frazil coming down from the upper reaches of the river, (Vol. 2, bottom of page 285, and top of page 286), and also in rebuttal testimony (Vol. 5, page 943, line 42 and following). He actually gives definite reasons for his opinion: It is, he says, a basin of an average width of 1000 feet and of a depth varying from 15 to 20 feet, according to the surveys made for the purpose of this case by Mr. Morrison, Respondent's engineer.

And even if the small dam at Drummondville has increased the water level in the basin by three or four feet, this basin was still from 12 to 17 feet deep in its natural state. And consequently nobody would believe, after what we have learned from the experts of either party, that the conditions affecting the accumulations of frazil in this basin have been changed to any appreciable extent by the construction of this small dam by the City in 1896.

This basin, which is three miles in length, and which ends approximately 1100 feet upstream from the railway, was completely free of frazil, and even of surface ice, at the time of the break-up, on Sunday, April 8, 1928, instead of being filled with enormous quantities of frazil and ice, as it had always been every spring prior to the construction of Hemmings Falls Dam.

Mr. McLachlan explains further that a basin of that nature has a beneficial effect during break-ups, because it diminishes the maximum elevation which the water may reach, inasmuch as it distributes the flow of water and ice over a longer period. And to define this phenomena of which Messrs. Surveyer, Roberts and Lefebvre have spoken previously, he uses in his rebuttal testimony, on page 930, line 23, the following words: "To give off the peak and flatten out the discharge."

We can readily understand that this can occur in a wide and deep basin, when free of ice, and we can also understand that this can happen in a deep and wide basin with only a covering of surface ice, as in the case of the Labonté-Dauphinais basin, on the 7th of April, 1928, and Mr. McLachlan admits this condition in his explanations on pages 930 and 931.

But it is difficult to understand how a basin, filled up with frazil to a thickness of 9, 10 or 11 feet, apart from the surface ice, can play this same role as a moderator in reducing the height of the water (the peaks of the flood). Under this latter assumption we would face phenomena similar to those of 1915 and 1921, that is, the mass of ice and frazil would offer much resistance, and, because of this resistance, the water would rise higher and higher in order to acquire sufficient energy to clear the obstruction and make way for the immense quantity of water coming behind. This could not happen, and did not happen, in 1928, and this may explain, at least in part, why the water did not rise higher in 1928 at the railway bridge than it had done in the past, in spite of the fact that the flow was far greater and that the conditions throughout the river were far more serious.

It might be useful here to point out that sometimes an expert like Mr. McLachlan, in trying to prove too much, may prove nothing at all, as he did on this question of the beneficial effect of the large artificial basin, created by the Appellant Company upstream from its dam.

On page 930, Vol. 5, in his testimony in rebuttal, Mr. McLachlan is asked to discuss the opinion brought forth by Messrs. Surveyer, Roberts and Lefebvre in this connection. He first admits that this question is indeed very important, and we believe it is worthwhile to cite verbatim the principal part of Mr. McLachlan's explanations:

> Q.—"Coming back to Mr. Surveyer's evidence, you will notice that he has declared that the building of the dam at Hemmings Falls has contributed to diminish the damage caused, by distributing the flow of the water over a period of six hours, even if it had been under natural conditions, there would have been nothing to distribute or delay the flow of the dam ("jam"). Will you state to the Court if that is a sound proposition or not?
>
> A.—That question that Mr. Surveyer raised is quite interesting. Under natural conditions, if a dam, and a jam occurred at Dauphinais' and stored, say 210,000,000 cubic feet of water as did the jam that actually formed there in 1928, we would have a condition were downstream you would have two basins to retard the flow, two basins to give off the peak and flatten out the discharge; two basins that would act as a protection to the bridge of the Canadian

National Railway at Drummondville. One of these would be the basin that would extend from the foot of this jam down to the sill below Labonté's. Another would be the basin that would extend from Hemmings Falls down to Drummondville. There would also be some area that would help in the rapids, at Hemmings Falls, but we will neglect that."

"In 1928, of course, the situation was different. The basin between Dauphinais' and the sill below Labonté's did not really operate to any great extent. It helped to a small extent, not to great extent. The basin in the power house also operated to the extent to which they permitted the water level to rise. It was about 6.6 feet, and then the basin below, between Hemming Falls and Drummondville, it operated also."

He admits, therefore, the truth of the contention maintained by Messrs. Surveyer, Roberts and Lefebvre on the important moderating role played by basins during break-ups, but while he attributes an important role to the basin below Hemmings Falls, under natural conditions, and also attributes an important moderating role to the Labonté-Dauphinais basin in its natural condition, nevertheless, he refuses to attribute a role of any importance in 1928, to this same basin, which was then considerably increased in width, length and depth by the construction of the dam. He merely states, on page 930, line 33, that "it did not operate to any great extent." He does not consider it worthwhile to give any explanation as to why a small basin, under natural conditions, should play an important role, while he claims, regarding a larger basin, that "it did not operate." Mr. McLachlan evidently assumes that we have sufficient faith in him to accept all his explanations with our eyes closed.

Let us recall again what we have said previously in regard to the obvious difference existing, insofar as the protection of the railway is concerned, to use Mr. McLachlan's own expression, between the Drummondville basin filled with frazil, in its natural condition, and this same basin, free of ice, as it was on the 8th of April, 1928.

This theory of Messrs. Surveyer, Roberts and Lefebvre, in connection with the important moderating role played by the large basin of the Appellant Company, on the 7th of April, 1928, appears, first of all, to be a common-sense truth. It is also admitted as a general truth by Mr. McLachlan, although he tries to make us admit that the laws of physics failed to operate at the exact moment of the 1928 break-up.

Furthermore this theory will prove to be correct, if only we will recall certain facts which have been perfectly established by the evidence.

When the Dauphinais' jam broke in the afternoon of the 7th of April, the water and ice went down the river, breaking the surface ice and stopping from time to time. Part of the water reached the dam and passed over the spillway, whilst the whole quantity of ice and part of the water were stopped to form the Labonté's jam.

The quantity of water completely released, and which passed over the dam, created an artificial flow of 120,000 cu. ft. per second. What was the quantity of water which was previously behind the Dauphinais' jam, and which was stopped by the Labonté's jam, or retarded by the large basin?... Was that quantity sufficient, if added to the 120,000 cu. ft. already mentioned to create an artificial flow equal or even greater than the flow which has been recorded on the 8th of April?... If so, we have to admit as a fact the moderating role of the large artificial basin, as Messrs. Surveyer and Roberts have contended.

All our experts, who are very well acquainted with the river, are in agreement in estimating that the Dauphinais jam held back a sufficient quantity of water which, had it been liberated and not been retarded and finally stopped by an obstacle (whether this obstacle was natural, as we claim, or artificial, as respondent claims) would have produced damages as great or greater than those produced on Sunday afternoon.

Let us see what has been put forward to discredit our contention on this point. Naturally, it is Mr. McLachlan again who is called upon to refute our contentions. Let us see how he goes about the task.

After having explained (pages 290 and 291, Vol. 2) that he had made long and complicated calculations, he gave us the result of these alleged calculations and pretended to fix with great precision the quantity of water and ice held back by the Dauphinais ice jam, at the time it started to move on, April 7th, at 4:13 p.m.

He starts by admitting (Page 291) the important moderating role of the Labonté-Dauphinais' basin, which he will further on deny in his evidence in rebuttal.

He then explains that by considering the rise in water level which occurred in the basin, above the dam, shortly after the Dauphinais jam moved down river and was partially held back on the hogback, he was able to conclude that the release of the Dauphinais jam must have resulted in a drop of 8 feet in the water level at Dauphinais' and upstream.

Thus, according to Mr. McLachlan, the quantity of water he found by "long and complicated calculations" must necessarily have resulted in a drop of 8 feet when this water was released by the going out of the Dauphinais jam at 4.13 Saturday afternoon.

If however, the quantity of water which actually was impounded had been far greater than Mr. McLachlan calculates, then the drop at and above Dauphinais', would have been much less than 8 feet.

Unfortunately for his theory, events did not occur in the fashion assumed by Mr. McLachlan, and we respectfully submit that the most profound theories must yield to facts, if the facts are well proven. Now, Mr. Pancrace Allard, Respondent's witness, was on his farm, located six or seven miles upstream from Dauphinais', on that very day, the 7th of April, and he remained there until 6 p.m., and he claimed that the water had not dropped, but on the contrary, had risen continuously. Now, as the result of the entire evidence, and according to the plans of the Quebec Streams Commission, showing the profile of the river, it is obvious than an elevation of 336 or 337, at Dauphinais, must corresponds to a very nearly equal elevation at Allard's, and that, also, a drop of 8 feet, at Dauphinais', must similarly produce a drop of 8 feet at Allard's unless we assume that between those two points there occurred a miracle similar to that of the Red Sea, as related in the Bible.

And as this drop of 8 feet did not occur, we conclude, with reason, that the quantity of water held back by the Dauphinais jam at 4 p.m., was very much larger than the amount shown by the learned calculations of Mr. McLachlan.

And when Mr. McLachlan is confronted, in rebuttal, with this statement of Mr. Allard's, instead of admitting that he made a mistake, he merely tries to throw doubt on the competence of a farmer to tell us whether the water dropped or remained at the same level, even though this farmer was on the spot and was doing nothing but watch the water. (page 962, lines 42 and following).

In other words, calculations made in an office in Ottawa, by Mr. McLachlan, who never saw the occurrences of 1928, must, according to him, take precedence over the statements of a witness who was well placed to observe, who was interested in ob-

serving, and who has told us what he has seen, upon the request of the same party who asked Mr. McLachlan to make his calculations.

There remains to consider the case of the Labonté jam, that is the jam which stopped on the hogback on the 7th of April, 1928, and moved out of there on the 8th of April, at 3 P. M.

We have already established that, in so far as the Respondent is concerned, the formation of this ice jam was beneficial in preventing an enormous mass of ice and water from flowing towards Drummondville on Saturday night, together with the 120,000 cubic feet per second of water which were then passing over the dam. Therefore, this case appears really to be of interest only insofar as the residents upstream from the dam are concerned, should we reach the conclusion that the formation of this ice jam is partially due to the dam, as has been held by the Honourable Judge Stein, in the cases of Labonte and Dauphinais vs. Southern Canada Power. This judgment has been reversed by the Court of King's Bench of the Province of Quebec, and we have considered it advisable to place before this Court certified copies of both judgments. Nevertheless, we will add a few words on this question.

We have already seen that the possibility of the formation of a jam at that spot, under natural conditions, has been strenuously denied by the riparian proprietors interested in claiming damages from the Appellant.

The existence of considerable jams at that spot in 1919 and 1920, has also been proven without contradiction. (These explanations are given on page 12 & 17 and following of the factum). We will recall that the existence of these jams has been proven by the elevation of the water recorded on the gauge at Labonté's, and this gauge having been in existence from 1917 until 1922 only, it seems sufficient to prove that during this short period serious jams occurred in two successive years, at the same spot where the ice stopped in 1927 and in 1928.

Let us recall also that the higher elevation of the 1928 jam does not appear a serious fact, if it is remembered that at Richmond, under natural conditions, a jam occurred in 1928, causing an elevation of the water 8 feet higher than any recorded between 1916 and 1928.

Insofar as eye-witnesses are concerned, who denied the possibility of a jam at that spot under natural conditions, correct mathematical proof has established that they were mistaken, or

were misleading us. Insofar as the expert witnesses are concerned, let us see if we can find in any of their testimonies a more definite proof.

We have seen (page 16 & 17 of the factum) that Mr. McLachlan ridiculed the very idea that a jam could form at the spot (on the hogback) under natural conditions. Confronted with our positive evidence, he reversed his opinion in rebuttal (Vol. 5, pages 947 and following), and instead of admitting frankly that he made a mistake, he gives us such a miserable explanation, that any uneducated, intelligent, man hearing him, would have shrugged his shoulders, in seeing this well-educated and intelligent engineer talk such nonsense.

Mr. McLachlan does not admit that with converging shores opposite Labonté's and below Labonté's, and with a pronounced bend in the river, tending to crowd the ice over to one shore (which fact would explain the diagonal directive taken by the jam in 1928), and with the submerged island (10 "C"), and with the hogback forming a three-foot rise in the bottom of the river, that the enormous mass of ice filling up the river to the bottom could have slowed down sufficiently to finally stop on the above-mentioned obstacles. Nevertheless, he assumes a jam stopping at that same spot, in 1920, because low temperature caused the water and ice, coming down the river with great speed, to freeze and stop on the sill or hogback. It is really worthwhile to read in the text this explanation of Mr. McLachlan, on pages 947 and 948, to see how far a man can go when he insists on being right in everything, and at all times, even when the facts contradict his explanations, and even if the obvious laws of physics and common sense contradict his theories.

May we add the following: Let us admit for a moment this explanation, which sounds more like a fairly tale than a reality, and let us then recall that, according to the testimony of Mr. Lefebvre, the Labonté gauge registered, in 1920, an elevation of water considerably exceeding that corresponding to the height for that flow of the river, and thereby showed clearly that a jam existed in 1920 also, and at the same spot. (Lefebvre, Vol. 4, page 799). But Mr. McLachlan explained at length that in the Spring of 1920, at the time of the break-up, the temperature was very high. He even went so far as to compare the years 1920 and 1928 in this respect, although the figures he gives in this connection show clearly that the comparison is very far from satisfactory. There remains, nevertheless, the fact that in 1920,

at the time of the break-up, the temperature was high, even though it was far from approaching that recorded in 1928. Therefore, if the 1919 jam can be blamed on a sudden drop in temperature, can we blame the 1920 ice jam on the high temperature on which Mr. McLachlan places so much importance?

So long as it is proven that jams were formed on that spot under natural conditions, there is no reason to be surprised that they also formed after the construction of the dam, and we believe that this being proven, the exceptional circumstances accompanying the 1928 break-up are sufficient to explain the contention of our engineers, to the effect that the Labonté jam was not due to the dam.

But we believe it is advisable to discuss, in a few lines, Mr. McLachlan's theory on the method of formation of this jam, which he states with so much certainty. We shall see once more at what perfectly erroneous conclusions one can arrive, to support, at all costs, a preconceived opinion, without taking the pains to check up and see if events occurred in that manner. He has given us in his main testimony (Vol. 2, pages 291 and following) the history of the formation of this ice jam at Labonté's as he has conceived it.

We shall not waste time to discuss this question in all its details, and we will refer to two points only in connection with this theory. If we refer to diagrams prepared by Mr. McLachlan and filed as Exhibits 36, 37, 38, 39 and 40, it may be seen that, according to him, all of this enormous mass of ice, containing all the surface ice of the river, from Lennoxville to Hemmings Falls, came down and accumulated silghtly upstream from the dam and under a two-foot thick layer of surface ice, without breaking this layer, and that this mass of ice would have then stopped and remained there in spite of a fairly strong current, with nothing to support it, and preventing it from moving on, except this roof composed of the surface ice.

We are not experts on questions of physics, but what we do know, prevent us from admitting as reasonable and plausible such an explanation. We can readily understand that particles of frazil, being lighter than water, can stick to the roof formed by this surface ice and that other similar particles can adhere to those already there, thus forming gradually so-called hanging jams.

But insofar as the phenomenon assumed by Mr. McLachlan, and which is supposed to have occurred on the 7th and

8th of April, 1928, is concerned, we confess respectfully that we are incapable of understanding how it could have happened. And we will permit ourselves, as laymen, to make a comparison which seems applicable.

During a snowfall in the course of our winters, we often see light snowflakes adhere even to the vertical walls of a house and remain there so long as a violent wind does not blow them off, but if we try to make a large quantity of snow stick to the wall, we would not succeed, because the small point of contact which holds the flake would not support the mass.

Similarly we can understand how light pieces of ice can stop under the surface ice which may present small irregularities. But we cannot understand how such masses of ices as were coming down the river could have stopped, with only the surface ice to hold them .

If this roof formed by the surface ice had had a pronounced slope, it might have constituted a point of support of some seriousness. But a glance at Mr. McLachlan's diagrams shows that the slope, according to him, was very slight, and it must not forgotten that the slope indicated on the diagrams is that existing after the occurrence of the phenomenon, and that the phenomenon itself, viz., the stopping of the ice would have occurred under a roof having no appreciable slope.

But there is much more to contradict Mr. McLachlan's theory. It is the cold fact observed by witnesses of both parties, and which had already been presented as evidence by Respondent's own witnesses, when Mr. McLachlan expounded his extraordinary theory.

If we examine the diagrams, filed as Exhibits 36, 37, 38, 39 and 40, it will be seen that the total uniform drop, between the dam and Labonté's would have been 16 feet, and this is the maximum possible drop in any event, since the water level at the dam was 318 and the maximum recorded at Labonté's was 334.

This would indicate a slope of 16 feet in a distance of a mile and a half, i.e., five inches to the arpent. Now, it is incontestable, and a fact of common experience, that such a slope is not noticeable to the eye. Under these conditions, how is that Messrs. Alphonse Bergeron and Albert Manseau, Respondent's witnesses, described an almost perpendicular wall of ice, 20 to 25 feet high,

according to them, and existing opposite Bergeron's property, over the hogback (Manseau, Vol. 2, page 254, lines 15 and following). Bergeron, vol. 2, page 264, lines 15 and following.

And these witnesses of the Respondent are corroborated by all the witnesses of the Appellant who were on the site, namely, Dunfield, Kitson and Rutherford. And let us add that the best description is given by Rutherford (Volume 3, Page 474, lines 46 and following).

It clearly appears, therefore, from the proof made by eye-witnesses of both parties, that there was a dam of ice at Bergeron's concentrating, at one and the same point, all the difference in level existing at that time between the dam and Labonte's farm.

It has also been proven without contradiction by Messrs Dunfield and Kitson, that on the morning of the 8th of April, a long and large stretch of clear water existed along the old shore of the river, this stretch of clear water extending right up to the ice jam. (Dunfield, Volume 3, Page 668; Kitson, Volume 3, Page 458). The approximate dimensions of this channel of open water can be seen more accurately on the plan exhibit Z-5.

We submit only this: if Mr. McLachlan's theory was true, this channel of open water could not have existed, but this space would have been entirely filled by ice.

What becomes, then, of Mr. McLachlan's theory, and why persist in building ingenious hypotheses without taking into account physical laws and, above all, without bothering to inquire if the actual facts do not entirely contredict such hypotheses.

But Mr. McLachlan, himself, was forced, at one time, to recognize this fact, in rebuttal, in Volume 5, Page 938, while speaking of the forces which shove the ice in rivers, he includes in his testimony this phrase, at line 50.

> "And the fact that evidence has been given here "to show that it was raised (the ice) 15 feet at a point".

This phrase applies to the Labonte ice jam, and the expert, this time, has to bow before the facts seen and sworn to, but the Court will note that, in spite of this very clear admission, Mr. McLachlan does not retract any part of his hypothesis thus contradicted.

Let us add, to conclude this subject, that Mr. McLachlan gives us an odd demonstration to support the hypothesis of his hanging jam in the river under the surface ice downstream from the hogback.

In his principal testimony (Volume 2, Page 305) he wants to add another proof which, to him, appears very important:

> "The notion that that jam could have stopped at "that sill and built up above that entirely, as I believe was "presented in the Labonte case, is impossible for another "reason: the space for ice between that point and Labon- "te's gauging station would only accommodate about "44,000,000 cubic feet of ice, yet the most conservative "estimates I can make, indicate there were about "200,000,000 cubic feet of ice apart in this jam. A two "foot ice cover between Windsor Mills and the point in "question would yield 264,000,000 cubic feet, according to "what I told you yesterday, so to set up the proposition "that all that ice was stowed between the sill and Labon- "te's gauging station (and we know Labonte's gauging "station was closed to the top of the water jam by water "level) is impossible".

In the fact indicated in the latter part of this quotation were true, namely, that the ice held back by the Labonte ice jam did not reach back further than the Labonte farm, there would evidently be serious grounds to support Mr. McLachlan's theory which places the larger part of this ice below the hogback.

We understand that Mr. McLachlan seems to have based himself on a declaration of Witness Sutherland (Witness for the Respondent) who lives about 8 arpents above Labonte's farm, and who said that the river was free of ice above his place "somewhere up".

But, as against this very vague declaration, Respondent has file in the record the declaration of his own witness, Charles Manseau, who was at home, on Lot 16, Township of Simpson, a good distance above the Sutherland place, (See plan Z-5). Mr. Manseau spent part of the afternoon, on Sunday, April 8th, in examining the river with a pair of binoculars, permitting him, he said, to see up to 12 miles. And this witness, who had observed the river thoroughly, says that the river was full of ice up to Island 71, (Cadastral Number) at Dauphinais'. What becomes, then, of the famous McLachlan theory? See testimony of Charles Manseau, Volume 2, Page 345, lines 9 and following.

Now, in conclusion, let us review some of the established facts:

1st—Ice jams used to form in the past at the head of the rapids under natural conditions;

2nd—The 1928 ice jam, referred to as the Labonte Ice Jam, stopped at the same spot;

3rd—The quantity of water, which Mr. McLachlan assumed to have been held above the dam and the jam, and which he arrived at by calculation, the accuracy of which we cannot appreciate, includes also the enormous mass of water which was held back by the walls of the dam and which continued to be held back when the jam broke on April 8th, 1928;

4th—The elevation of the water behind the Labonte ice jam, on Sunday, April, 8th,was 2 feet 8 inches less than the elevation existing on the preceding day behind Dauphinais' ice jam, which extended over a distance of at least 7 or 8 miles, according to Mr. McLachlan himself (Volume 5, Page 937, lines 9 and following). Therefore, the basin containing the water on Sunday was perhaps somewhat longer, but the depth of water was 3 feet less;

5th—Even though the most academic calculations would lead us to believe the conclusion sought by Respondent, and by his expert, namely, that the elevation of the water at the railway bridge was caused by the dam, there still remains the proof already established, without contradiction, that frequently, in the past, water has reached as high an elevation as that recorded in 1928; a fact which we believe invalidate seriously the said academic calculations.

The facts above submitted constitute an answer to the main points upon which the judgment of the Exchequer Court rests.

There are still some assertions of the judgment "a quo" which, in our opinion, constitute plain errors, and we desire to make a short answer, before concluding this part of our plea.

At pages 1088 and 1089, the Judge discusses the assertion made by our experts, stating that the break-up on the St-Francis River happens earlier at Lennoxville and Richmond than at Drummondville. And he concludes that this assertion has no foundation whatever.

But this has been asserted, not as an opinion, but as a fact, by Mr. Lefebvre, who is the Chief Engineer of the Quebec Streams Commission. Official statistics have been kept for many years; and those statistics indicate the date of the break-up at the several places along the river, for each year.

And this fact has not been contradict nor even questioned. Mr. MacLachlan himself, speaking of the break-up in 1920, before the building of Hemmings Falls dam, states that the break-up took place at Richmond on the 27th of March, and at Drummondville on the 30th of the same month, and he explains that he relies for his assertion on the official reports of the Quebec Streams Commission.

Moreover, we have the evidence of all the respondent's witnesses, and mainly of Laprade, to the fact that the ice of the upper part of the river used to jam at Dauphinais every spring, before our dam was built at Hemmings Falls. We have previously referred to this evidence, in discussing the other points.

What the Respondent's witnesses have asserted, and what we admit, is that the ice in that stretch of the river from the hogsback to the site of the dam, was broken down first in the spring, because this was the place where the main rapids were situated.

But as to that stretch from the hogback upstream to Dauphinais, for a distance of three miles and a half, the ice stayed there until the ice from the upper part of the river arrived. The ice used to jam at Dauphinais each year under natural conditions like it does now, and it is an error to suggest, as the Honourable Judge does, that probably, without the dam, the surface ice on the Labonté-Dauphinais basin would have gone before the arrival of the Richmond ice.

— — — — — —

At pages 1105 and 1106, the Honourable Judge discusses the manipulation of the sluice-gates, and put blame upon the Appellant for not having opened those gates enough in the days preceding the 8th of April. Perhaps it would be sufficient to point out that we are sued for having opened those sluice-gates too much (paragraph 5th of the information), and consequently we should not be condemned for not having opened them enough...

But we are prepared to discuss this point in a few lines.

We take for granted that, as long as the sluice-gates are open in such a manner that the out-flow is equal to the inflow, we don't interfere with the natural flow of the river. And the elevation of the water, as indicated by the charts produced as exhibits Z-6 and Z-7, is a clear evidence that the sluice-gates were manipulated in a correct and perfect way in order to attain that result.

We may add also that the ice is never allowed to adhere to the spillway or the flashboards during the winter. A special device described by Mr. Griffin (Vol. IV, page 696) always keeps a space of open water between the flashboards and the ice. In the spring as already said, those flashboards are taken off, and the surface ice is kept at a level higher than the crest of the spillway, in order to permit this ice to flow easily over the spillway at any time. If we had then followed the suggestion of the Honourable Judge, and decreased the level of the water under the mark 314, which is the elevation of the spillway, any movement of the ice would have made same adhere to the concrete wall, with the consequence that this ice would have been prevented from passing over the spillway; and we respectfully submit that the respondent would have been perfectly justified in blaming the appellant for having interfered with the free descent of the ice.

The Honourable Judge suggests also that the gate No 1 should have been kept wide open at all times from the 7th of April at night, until 3 o'clock P.M. on April 8th. Let us say first, that this gate was opened 16 feet, viz to the elevation 315, which is nearly the maximum. But there is much more to be said about this criticism.

The ice jam was then formed at Labonté's. This jam could normally stay in the river as long as the pressure of the water above it was not too great. What is this pressure which the ice jam had to support? What created this pressure? The difference between the level of the water downstream, and the level of the water upstream. The suggestion of the Honourable Judge is that we should have tried to lower the level downstream, by opening the sluice-gates still more. The clear result, and the only result, would have been to increase the water head on the jam, to increase the pressure upon the ice jam. And then we would have justly incurred the reproach of having, by a deliberate act, provoked the breaking of the ice jam.

At page 1072, analysing the theories submitted by the experts for the respondent, the Honourable Judge says that they attributed to the small wooden dam erected by the Town of Drummondville the floods subsequent to its erection.

We have already dealt with the question of this small dam, and we are confident that we have demonstrated perfectly that it had no effect whatever on the floods recorded by our witnesses. But we desire to add that this assertion of the Honourable Judge is an error; that in fact the experts for the Respondent never had a word of blame, in their testimonies, for this small dam. We sincerely believe that the perfect and unanimous silence they kept about this small dam is a clar evidence that they had the same opinion as we had, to wit, that this small dam, at the foot of a large and wide basin of still water, had and could have had nothing to do with the floods referred to in the evidence.

OUR PLEA ON RESPONDENT'S NEGLIGENCE

As we have said at the beginning of the factum we hold Respondent negligent on two counts:—

1st. Respondent should not have allowed an embankment of earth, sand and gravel incapable of resisting the pressure of water and ice, during a violent break-up, to remain in such an exposed location in the river.

2nd. In view of the particular circumstances accompanying the 1928 break up and the absolutely abnormal occurrence of the preceding days, all along the river, and especially at Richmond, where officers of the Respondent were well aware of conditions, Respondent was guilty of serious negligence in not taking any precautionary measures to prevent the accident as a result of which he seeks damages from us.

With all the explanations given in our factum it is possible to prove these two points rapidly.

It is definitely proven that the embankment which washed out in 1928 had been in danger of a similar fate in 1915 and 1921. We have already mentioned that when Divisional Engineer Dupuis visited the site after the 1921 break up he recognized this serious danger even though no disaster had occurred. In 1915 he did not visit the site and, probably, no report reached him since he does not refer to any in his testimony. Nevertheless the same danger had existed.

In order to avoid further reference to points already discussed and which, in our opinion, have been clearly proven, we shall discuss this question of negligence as if the construction of the dam, upstream from the Railway, had in fact, aggravated the conditions affecting break ups, in so for as the Railway is concerned.

Under this assumption and in the face of Respondent's contention to the effect that the conditions affecting break ups have necessarily and naturally aggravated by the construction of the dam, we submit that it was Respondent's express duty, as early as 1915, and in any event not later than 1925, to replace with a more solid structure the embankment which was finally washed out in 1928.

How can anyone uphold Respondent's contention to the effect that the Hemmings Falls dam was bound to aggravate the break ups and say, at the same time, that Respondent was not guilty of serious negligence in tolerating the existence of this embankment which escaped destruction by mere chance only in 1915 and in 1921 prior to the construction of the dam?

The Engineers and Experts of the Respondent must have known in 1925 what they dogmatically explain in 1932 during the hearing. This being so, and remembering the danger which threatened in 1915 and 1921, they had every reason to believe that with the aggravated condition created by the dam, their embankment was threatened with destruction each spring. If, under these conditions, and with full knowledge of the existing danger, they allowed the passage of trains without taking any special precautionary measures, how can they escape our accusation of serious negligence?

If, in 1925, they did not know that the construction of the dam constituted an aggravation of danger, are we not justified in doubting this opinion of theirs which would be subsequent to the accident and which they would have adopted only when they were preparing their claim in damages against the Appellant?

In the case of The King vs. The Nashwaak Pulp & Paper Co. to which the Honourable Judge of the first instance referred, on page 1098, vol. 6 of the record, Judge Audette held that there was negligence on the part of the railway in erecting a sand and gravel embankment, 18 feet high, on the shore of a river, without protecting it. What can be said, then, about a similar unprotected embankment built in the bed of an important and

violent river and which is maintained therein without special protection when the Engineers of the Respondent themselves have recognized that this embankment has been exposed several times to a similar danger as in 1928.

To answer our argument by stating that the embankment was not destroyed in the past, is not, in our opinion, a satisfactory answer. There are numerous weak defective or badly built constructions which do not collapse and do not cause accidents. But whenever such a construction is destroyed and its collapse causes an accident, the Courts always hold that there was negligence and imprudence on the part of the proprietor of the construction and the Courts do not admit that the consequences can be escaped merely by claiming that a similar construction did not break down.

Similarly, the fact that the embankment had endured until 1928 although it was not strong enough to withstand the pressure of ice and water during break ups, merely indicates that, up to that time, Respondent had been fortunate enough not to cause a disaster while tolerating the existence of a condition capable of causing one.

The answer given by the Respondent and by the Judgment "a quo" to the effect that the embankment was inspected every day is not satisfactory either. This embankment could support the track and the passage of the trains. Its daily inspection could reveal whether or not it was in a condition to fulfill its purpose. But the inspection made by the road foreman could not alter the nature nor the type of its construction, and, it was this type of construction which exposed it to sudden destruction it, if half an hour after the inspection, a mass of water and ice come from the river as in 1915, in 1921 and in 1928.

Respondent's engineers knew that this embankment was exposed to sudden destruction in the event of a break up such as those of 1915, 1921 and 1928. To tolerate its existence and to allow trains to pass on it without taking special precautions at the time of the break up, constituted a serious imprudence and a culpable indifference when the consequences of an accident might be the loss of many lives.

Since the accident in 1928, watchmen are kept on duty at either end of the bridge for several weeks each spring, although the present structures are incomparably better than the embankments existing prior to 1928. Before the accident no such obvious

and elementary precautionary measure were ever taken although they were strictly necessary when the danger was so much greater with an earth embankment. (See testimony of S. A. Pineau, Vol. 1, page 56.)

With watchmen on duty, as there have been since 1928, the embankment would have been demolished, the damages to the track would have been caused, but we would not have had occasion to deplore any loss of life, nor would there have been any damage to the locomotive, train, etc.

The watchmen would have signalled the train in time, and Items A, B. C, F, and G, would never have been written in the declaration, and the amount of the action would have been reduced by $50,105.17, which is the total of these various items

To summarize our contention is as follows: Respondent, his Officers and his Engineers, knew that the embankment was not strong enough to support, without serious danger, pressures such as those to which it had been subjected on many occasions in the past. Whatever the cause of the very serious floods of 1915 and 1921 (not to mention other floods of almost equal importance), whether these floods can be attributed to nature alone, as we believe, or whether they can be attributed to the small dam near the bridge, as Respondent contends, nevertheless it was the duty of the Respondent to replace, at that time, his inedequate embankment by a more solid construction. And he was not justified in waiting until after a castrophy had occurred before making the changes which the nature of the place and previous events made obligatory to insure the safety of passengers carried in the railway trains.

— — — — — —

We claim in addition, that Respondent was guilty of very serious negligence in not taking any precautionary measures whatsoever in 1928, when all signs pointed to a particularly dangerous break-up; the seriousness of which was known to the higher Officials of the Respondent.

The Honourable Judge of the first instance goes to a lot of trouble to explain in his judgment that the accident occurred so rapidly, and so suddenly, that the Officials of the railway did not have time to telegraph to the next station to order the train stopped. (Volume 6, Page 1089, and following).

But it is not under this narrow angle that we have considered the question of negligence. If no precautionary measures

are taken to forestall the possibility of a disaster, it may so happen that, at the last minute, it cannot be avoided. And it seems to us indeed that this would be too easy a way to escape accusation of negligence.

We blame the Respondent for the following:

(a)—In the past, on numerous occasions, the same disaster was possible; even though it did not occur. And each time in the past the apparent conditions on the river were far from being as serious as in 1928.

(b)—If the accident to the embankment was sudden the conditions which led up to it, and made it possible, were far from being sudden, but on the contrary, were plainly to be seen by the Respondent and his Officials.

(c)—It appears from the testimony of S. A. Pineau, Respondent's Agent at Drummondville (Volume 1, Page 51, and following), and of John L. Burns, Superintendent for the Respondent at Richmond (Volume 4, Page 702, and following), that no system of protection was ever organized in the past during the break-up periods, and that, more particularly in 1928, when conditions at Richmond were far more serious than they been in the past, no notice was given to Drummondville to take any precautionary measures whatsoever.

(d)—If notice of a possible danger had been given to Drummondville on the Sixth or Seventh of April, watchmen would have been placed near the bridge and the disaster would have been avoided.

In face of the events which took place in 1928, and which we have already analyzed, and to which it is useless to return, we submit that it was the duty of the railway authorities to take special precautionary measures, and, as they did not take any, it must be declared that the accident of the Eighth of April, 1928, is attributable to the negligence, carelessness and lack of foresight in not placing watchmen on the part of the Respondent, in so far as the wrecking of the train is concerned. The consequence would be to reduce by $50,105.17 the amount allowed by the Judgment, even in the case that damages to the embankment and to the tracks were attributable to the dam of the Appellant.

To appreciate this question of negligence on the part of the Respondent may we be permitted to quote, in conclusion, the opinion of a witness for the Respondent, Madame Melvina Martel. On Page 43, lines 25 and following, Madame Martel says:

> "Ma petite fille s'est mise à dire: "J'entends crier, crier l'express". J'ai dit: "Non, il ne passera pas de chars, ils ont téléphoné pour ne pas qu'ils passent: il n'en passera pas certain".

Mrs. Martel was expressing the popular opinion, and she thought that the Railway Company, responsible for the life of its passengers, had taken measures to prevent a disaster similar to that which occurred. From the testimony of Messrs. Moisan and Girouard there were hundreds of people at the place as early as half past three in the afternoon. Only the employees and the officers of the Railway Company were nowhere to be seen.

— — — — — —

THERE IS NO "LIEN DE DROIT" BETWEEN THE PARTIES, CONCERNING THE DAMAGES CLAIMED IN SUB-PARAGRAPH F of PAR. 8 OF THE INFORMATION.

We submit further, without prejudice to what we have already pleaded, that damages claimed under sub-paragraph F. of Paragraph #8 of the information to the amount of $19.952.35 cannot be claimed from us in any case, whatever the decision may be on other points.

All the items forming the above mentioned total were paid voluntary by the respondent without legal or contractual obligation on his part. The Respondent himself pleads in the present action that there was no fault on his part, — and therefore no responsibility —, and that the accident was due to the fault of the Appellant only. If this is so amount paid by the Respondent, without the Appellant even being asked to discuss or contest the value of the claims made, must be rejected.

We will content ourselves with submitting the following jurisprudence on this point.

1. If the Crown (Railway Company) was not guilty of negligence, then these items are paid by the Crown (Railway Company) gratuitously because they were under no legal liability to

pay them. The Crown (Railway Company) therefore cannot recover them against the Power Company.

See ADMIRALTY COMMISSIONERS
vs S. S. "AMERIKA"
1917, A. C., 38.

"One of H. M.'s submarines was run into and sunk by a. s. s. and the crew were drowned. In an action of damage by collision brought by the Admiralty Commissioners against the owners of the s. s. Defendants submitted to judgment on the basis of paying to Plaintiffs 95 per cent of their damage to be assessed by the Admiralty Registrar. Plaintiffs claimed as an item of damage the capitalized amount of the pensions payable by them to the relatives of the deceased men: — HELD: the claim failed (1) on the principle that in a civil Court the death of a human being could not be complained of as an injury; (2) on the ground of remoteness the pensions being voluntary payments in the nature of compassionate allowances."

Lord Summer concludes his judgment by saying: — "My Lords, apart from the question of civil liability for the death of a human being, there is another aspect of this case. Injury is the gist of any action of negligence; if the negligence does not damage, no action lies. In the present case, the sums claimed were paid to widows and other dependants of the drowned men under Admiralty Regulations ————, which expressly declare that these are compassionate payments, and granted of grace and not of right, both in kind and in degree. True that in such cases they were always made, and most properly made, but none the less the money claimed was lost to the Exchequer directly because the Crown, through its officers, was pleased to pay it. The collision was the causa sine qua non; the consequent drowning of the men was the occasion of the bounty; but the causa causans of the payment was the voluntary act of the Crown, ———— Nor would it have assisted the Appellants' case if they could have established that the making of these compassionate allowance by the Crown was in the nature of a contractual obligation. In any case, the contract would have been a contract with the deceased man and the damages must be measured by the value of his services, which were lost, not by the incidents of his remuneration under the terms of his contract of employment ———— so, conversely, a master cannot count as part of his damage by the loss of his employee's services sums which he has to pay because his contract of employment binds him to pay wages to the servent while alive and a pension to his widow when he is dead."

Lord Paymen of Waddington says, in part:—

"There are in my opinion two sufficient reasons why this appeal cannot succeed. The first is that the items of damage which the Appellants desire to be allowed are too much. The second is that no sufficient case has been made for over-ruling Lord Ellenborough's decision on Baker vs Bolton (1 Camp. 493) to the effect that in a civil Court the death of a human being cannot be complained of as an injury."

Re pensions and allowances, his Lordship says:
"These are granted under statutory authority, but it does not appear that their grant formed any part of the contract between the Admiralty and the seamen whose lives have been lost through the Respondent's negligence. They are, it seems, compassionate allowance only, which, from a legal standpoint, the Admiralty might have granted or withheld at its discretion. Under these circumstances, they cannot constitute an item of damage. No person aggrieved by an injury is by common law entitled to increase his claim for damage by any voluntary act; ———— But further, even if the pensions and allowances in question were granted pursuant to contracts between the Admiralty and the deceased seamen, ———— they would in this case constitute deferred payment on services already rendered and have no possible connection with the future services of which the Admiralty had been deprived."

— — — — — —

33 Cyclopaedia of Law and Practice
Page 742, sec. 3 (b::—

"A railroad company is not liable for injuries due to collisions or accidents to its train caused by the negligence or wrongful acts of third persons not in the employ of the company and done without its knowledge or consent."

———————

See Perron vs Village of the Sacred Heart of Jesus.
1929, 1 D.L.R. Page 197

In the Supreme Court, Anglin C.J.C. rendered part of his decision as follows:—

"The plaintiffs (Appellants) seek a mandamus to compel the defendant Municipality to accept payment by a third party of an

alleged debt of its Secretary Treasurer In order to succeed they must make out a case within Article 1141 C.C. or establish agency of such third party in making payment for the alleged debtor. Two essential elements appear to be lacking".

BAILLARGEON vs MLLE STEELE (Mr. Justice Greenshields) Vol. 33, page 42.

"In any action in damages for illegal arrest, the Plaintiff cannot recover the amount that he has paid to his lawyer to defend him, without making proof that this sum is just and reasonable considering the circumstances and the condition of the parties." "I am not prepared to admit the proposition that, on an action of this kind, a Plaintiff may recover from the Defendant whatever sums the Plaintiff may have seen fit to pay to counsel, unless some proof is made to justify such a charge. In other words, a man has not the right to pay to counsel whatever he may see fit in his generosity, and then proceed automatically so to speak, to charge it against an unfortunate defendant, without proof as to the value of the services.

— — — — — —

B. Must be proved that amount paid was reasonable.

4. See James A. Hathaway et al and Ed. Chaplin 7 M.L.R., Q.B. p. 317

"Where appellants, by a claim filed upon an estate in liquidation, claimed indemnity for an alleged loss made by them upon shipments of cattle from Boston to Liverpool, that the account sales received by claimants from their Liverpool agents were insufficient, per se, to make proof of the loss."

See Marshall vs The Grand Trunk Railway Company of Canada. (Superior Court) 5, R.J.Q. p. 363.

"HELD:.....that person suing for corporeal damages must show how far his power of making a livelihood is impaired, in order to obtain indemnity for the future."

See Mills et al vs Smith, KB. Vol. 28. 437.

"A Judgment granting damages for the following considerations: "considering that the evidence is vague, indefinite and lacks precisions as to detail, does not supply sufficient information to enable the Court to determine with any fair degree of certitude what

are the constituent elements of the loss claimed, the evidence does not afford a safe measure of the damages which the Plaintiff may have suffered by the cancellation of his contract, and suggests that the profits which the Plaintiff might have made are problematical, the Court appreciating the evidence as a whole in the manner that a jury might have done, assesses in view of the circumstances of this case, the damages at $..... is founded on a wrong principle. The amount of the damages to be granted must be ascertained by the evidence."

THE RESPONDENT HAD NO AUTHORITY TO INSTITUTE THE PRESENT ACTION, AND SAME COULD HAVE BEEN INSTITUTED ONLY BY CANADIAN NATIONAL RAILWAYS, AND BEFORE THE SUPERIOR COURT OF THE PROVINCE OF QUEBEC.

This is our last argument, but we sincerely believe it is not the least important.

In order to support its contention, the Respondent pleads that the Canadian National Railways was and is only a mandatary, and consequently that legal suits could, and should be instituted in the name of the mandator, the Respondent.

We are prepared to admit that this contention would be correct, if the Canadian National Railways was an ordinary mandatary, submitted to the provisions of the general law. But this is not the fact at all.

The Mandator, in our case, is the Sovereign Power in our country. The mandate he gives is not subject to the general or special laws of any Province, and the Mandator had authority to give the Mandatory any powers he thought fit to give.

The Canadian National Railways Company was incorporated by the supreme authority of the Federal Government. The same government specified, in several sections of chapter 172, R.S.C. 1927, the powers which could be entrusted to this new and rather special Corporation. Section 19 is the most important in this respect, and we had better quote same at length:

> "19. The Governor in Council may from time to time by Order in Council entrust to the Company the man-

agement and operation of any lines of railway or parts thereof, and any property or works of whatsoever description, or interests therein, and any powers, right or privileges over or with respect to any railways, properties or works, or interests therein, which may be from time to time vested in or owned, controlled or occupied by His Majesty, or such part or parts thereof, or rights or interests therein, as may be designated in any Order in Council, upon such terms and subject to such regulations and conditions as the Governor in Council may from time to time decide, such management and operation to continue during the pleasure of the Governor in Council and to be subject to termination or variation from time to time in whole or in part by the Governor in Council."

Those are the main powers which can be entrusted to Canadian National Railways, and which are in fact entrusted to the Company, when the Governor-in-Council gives the Company the management of any railway line mentioned in the statute. As the old Intercolonial Railway line, the management of same has been entrusted to the company by the order-in-council, fyled as exhibit 4, (Page 986).

Even with the very wide terms of this section 19, a doubt could arise as to the power of this special mandatary to institute legal suits in its own name. And the section 33 has been enacted, giving clearly to the Company the right to institute in its own name, and without a fiat, any legal suit of the nature of the present one.

We respectfully submit that, so long as the Canadian National Railways Company is entrusted with the powers conferred upon said Company by the statute, the said Company has the sole authority to institute legal suits like the present one.

In other words, we submit that the meaning of the statute is such that the Company, so long as the contract exists, is vested exclusively with all the rights which the King could previously exercise.

The Respondent relies upon the term "may" which is employed in section 33, and pleads that this terms "may" implies that the power conferred on the Company is not exclusive.

We respectfully submit that this term "may" is only employed in order to convey to the Company, a special power which

the general terms of section 19 would not perhaps have included. But once this special power is conferred on the Company, the King cannot exercise it in His own name. The King can at any time terminate the mandate in its entirety, assuming the chapter 172 constitute only a mandate, but it would need a special law to permit the King to exercise specifically in His own name of the powers specified in the statute, as far as management is concerned. We submit that the same rule applies to the power conferred on the Company as regards the legal suits.

And there is no doubt whatsoever that a legal suit instituted on behalf of Canadian National Railways Company, should have been instituted before the Superior Court of the Province of Quebec, in our case.

We may add also that our interpretation of the statute is still reinforced by the following argument:

There is no doubt that the Canadian National Railways had the necessary authority to institute the present legal suit. Then, if we admit that the action can be taken on behalf of the Respondent, it means that two different legal suits can be instituted against the Appellant for the same reasons. Will it be held that the Statute permits that?

We also point out that the locomotive and the cars which have been damaged were the property of Canadian National Railways; that all the payments which were made for repairs, indemnities, etc. were paid by the Canadian National Railways. The allegation of the information, that the Respondent has paid any of the amounts therein specified, or that He has been called upon to pay the same is not supported by any evidence whatsoever.

— — — — — —

On the whole, we respectfully submit that the appeal should be maintained, and that the Respondent's action be dismissed, with the costs in both Courts.

OTTAWA, January 15th, 1935.

Joseph Marier, K. C.,
Alphonse Décary, K. C.,
Attorneys for Appellant.

Honourable J. L. Ralston, K. C.,
Counsel.

DOMINION OF CANADA

In the Supreme Court of Canada

(OTTAWA)

On appeal from a Judgment of the Exchequer Court, for the Province of Quebec, (in appeal),

BETWEEN: —

The Southern Canada Power Company Limited,

(Defendant in the Exchequer Court),

APPELLANT.

— vs —

His Majesty the King,

(Plaintiff in the Exchequer Court),

RESPONDENT.

Appellant's Factum

JOSEPH MARIER, K.C.,
ALPHONSE DECARY, K.C.,
Attorneys for Appellant.

HON. J. L. RALSTON, K.C.,
Counsel.