

FLOOD PROBLEM IN ONTARIO MAY SOON BE AS SERIOUS AS IN OHIO UNLESS PROMPT STEPS ARE TAKEN

Every Year Sees Greater Risk to Human Life and Damage to Property—Writer Says Streams Can Be Made Safe, Navigable and Power Producers.

[By Jack South in the Toronto Star Weekly.]

Has Ontario a river problem like that of Ohio? Are we at all likely to have, even on a small scale, a flood disaster like that which overtook Dayton and the other cities and towns along the Miami River? Is there any way of preventing the annual floods, and of conserving the enormous waste of water, not only for producing electric energy, but for purposes of navigation and irrigation? These are the questions the Ontario citizen has been asking himself during the past week.

Floods are common on a number of our rivers. The property damage has been enormous, and the loss of life, although smaller than would have been expected, large enough to warrant alarm. Some of the best known examples of floods in the last three years are the ones on the Credit, the Toronto, on March 7, 1910, and the long list in April, 1912, including the severe floods on the whole Grand River system (which is the real danger point in the province) on the River Boyne at Alliston, the Sydenham and the Port Huron, the Thames at London and Chatham. This spring has seen still more floods, and apparently the event has become established as an annual fixture. Among the many points threatened on the Grand River are the important cities and towns of Brantford, Galt, Caledonia and Dunnville. An idea of the rapidity of the flow of water at flood tide may be gained from the estimate of City Engineer James, of Brantford, that on one Sunday in April, 1912, twice as much water passed through the river at that place as usually flows past in six months!

Two Aspects of the Question. There are two aspects of the question, the preservation of life and property, and the economic problem of securing a uniformity of river flow to produce electrical power and to provide regularity of navigation. As for the danger to human life, we have been fortunate up to the present, but should be prepared for every emergency, and keep the element of safety always to the front.

The commercial advantage of an even flow of river water is undoubted. What it means for navigation the people of the Grand River system especially know to their cost, when in the summer, the river is but a trickling stream. In the olden days, before the railroads came, barges carrying coal, were as far up the Grand River as Galt, and there is no reason why history should not repeat itself, and the towns along the rivers that could be made navigable at small cost, be freed from railroad monopoly. As to generation of power, real

THE GREY NUNS USE ZAM-BUK

Many of the leading institutions throughout Canada have now adopted Zam-Buk as a standard preparation without equal for skin diseases and injuries. From the St. Patrick Asylum, Ottawa, comes the following: "Gentlemen,—In the orphanage department of the asylum, we have found Zam-Buk very good for healing cuts, sores, and skin injuries, and shall continue to use it for such. "Yours sincerely, " (Signed GRAY NUNS.)"

this extract from the report on Water Powers, issued by the Canadian Commission: "The uniformity of the flow of water greatly affects the values of water powers situated upon the various watercourses. For example, the St. Lawrence, owing to the great storage capacity of the natural reservoirs found in the Great Lakes, has the most uniform flow of any large river in North America, or probably in the world."

This is the problem: Can you secure the commercial assets and at the same time avoid jeopardizing the lives of the people who live along the river banks? If anyone could give an answer it should be the Ontario Government. With commendable persistence deputations from Grand River sections have waited on the cabinet in the last five years and have urged action. Up to the present nothing has been done. The Government in answer to a question by Thomas Marshall, M.P.P. for Monck, one of the constituents through which the troublesome river flows, stated a few weeks ago that a hydrographic survey of the Grand River watershed had been made by a Government engineer. It is strange that such a report had not been made public before this time; it is likely, however, that the long silence will be broken soon. There is a motion before the Legislature now for the production of all reports on the subject, and, moreover, the Grand River Improvement Association has held another meeting since the Ohio floods, and has determined to send a still larger deputation to the Prime Minister and impress him with the fact that something must be done. One of the reasons assigned this week by a member of the House to explain the apparent apathy of the Government is that if any comprehensive scheme should be adopted for the Grand, constituents in the neighborhood of all the rivers in the province would ask for equal treatment for all rivers. This same factor operates to delay other public works. It is stated freely, for example, that the Government would not hesitate a moment in giving a substantial out and out gift to the permanent Toronto-Hamilton roadway scheme, were it not afraid of the consequences.

Causes of the Floods. The chief causes of river floods are generally agreed upon. Deforestation and the drainage of swamps must bear the blame. Words of the source of streams and along the banks check the rain and the little rivulets from rushing pell-mell into the stream. They hold the water back, and tend to equalize the flow. Swamps perform a similar service. The figures of financial losses by floods in the United States, increasing year by year, as the forests have been denuded, form one of the graphic bits of evidence in support of the deforestation theory. In 1900, the loss was \$45,000,000; by 1909, it had grown to \$238,000,000. And 1913 will be the largest yet! The only guaranteed, effective cure for the flood problem is to restore the forests. This is a big task, however, and some people cannot wait till the process of reforestation is completed. They must have a more immediate aid, and therefore they build dams to store the water which is let off gradually when needed. The advocates of dams and reservoirs have several important authorities in their favor. For example, in his first message to Congress in 1901, Roosevelt had this to say: "Great storage works are necessary to equalize the flow of streams and to save the flood water. Their construction has been conclusively shown to be an

undertaking too vast for private efforts, nor can it best be accomplished by individual states acting alone. The storing of floods in reservoirs at the head waters of our streams is but an enlargement of our present policy of river control, under which levees are built in the lower stretches of the same streams. The Government should construct and maintain these reservoirs as it does other public works. Where their purpose is to regulate the flow of streams, the water should be turned freely into the channels in the dry season to take the same course under the same laws as the natural flow.

The Great Big "If." There is no doubt of the commercial usefulness of dams and reservoirs, and also their protection to human life by lessening floods—if, and in this case the IF should be written in as large capitals as the type allows, and the reader should imagine that it is still larger—IF the dams don't break. But a study of the floods, not only the last ones in Ohio, but all the serious ones in the States, the famous Seine floods in 1910, which brought deaths to the rural localities of France, and sensational property loss and inconvenience to Paris, and our own water disturbances in Ontario forces the belief that the building of dams is risky business, for in all these cases the news accounts are full of the expression, "The bursting of the dam caused the worst devastation," or "increased the extent of the disaster." Take a couple of examples close at home. The electrical power dam on the Credit River at Brindale broke in the spring of 1910, and again in 1912, and considerably heightened the loss from those floods. In April, 1912, the dam at one of the

mills right in the centre of the city of Owen Sound burst during a period of river stress, and the rush of waters submerged a part of the business section. More spectacular instances have occurred at Dayton, Akron and Peru, and, in 1911, at Austin, Pa., not to mention historical examples further back last century.

Max a Small Unit Dams. "I wouldn't live in Fergus if there was a big dam or reservoir on the Grand River above the town," was the emphatic statement of a citizen of that place, when discussing the question this week. "I should be in constant terror." This opinion is a natural one, and is probably shared by a large number of people in Ontario. The only apparently safe way to build a big reservoir is to have it spread over a large area. This, however, involves the expropriation of a lot of territory on both sides of the river for a long way back. This would be an expensive proposition, although quite feasible. The trouble is that these reservoirs always have the example of one at least of the reservoirs in the Ohio country. It was six miles long, and extended over much ground, but it was one of the dams that burst.

There is a last resource to fall back on and it sounds like the best of all—the building of many small unit dams on the rivers near their sources and on their little tributaries. By this means, the wild flow of the waters is retarded to a very appreciable extent, and the energy of the flood diminished. The work evidently should be done either by the Government, or under strict government supervision and control. No expense should be spared to insure, as far as humanly possible, the efficiency of the work. Whatever the solution—the difficulty faces the people of Ontario, and they should be kept informed until definite and correlated steps have been taken to get sufficient commercial benefits from the rivers of the province, and yet above all, to protect with every safeguard human life and property.

THE PUBLIC SCHOOL

Miss M. E. Fleming, Grand Avenue School.]

GRADE THREE.

The Third Grade of the public school is one of transition, coming as it does between the strictly primary grades and those of more advanced studies. The aim, therefore, is to make this transition natural and pleasant, while there is awakening in the child's mind, a growing knowledge of his own mental powers.

Here the pupil should form the important connection between learning to read and reading to learn. In order to accomplish this, a great variety of attractive reading material must be presented, so that the pupil may discover for himself, through his own natural love of stories, that the ability to read is a key, which will open for him many future treasures. The material used, besides the regular school reader, consists of a number of sets of supplementary books supplied by the school board and public library, numerous stories out from magazines and papers, and a library of the pupils' own story books brought to school for general use. Reading is done both silently and orally, and when the former is used, pupils are encouraged to tell what they have read afterwards to the rest of the class, in order to see that they have grasped the thought. The power they have gained through the use of phonics enables them to make out for themselves the majority of words, and most of them take a great pride in exercising this power. In oral reading, clear and distinct enunciation is encouraged, rather than an attempt to give a forced elocutionary expression, unnatural to the child.

The principal aim in the composition work in this grade, is to get the pupils to express their thoughts fluently and naturally, and in as good language as possible. As a means to attain this result, they are required to tell orally, in a distinct and clear tone, stories they have read or have been told,

imaginary autobiographies of living things, descriptions of events, real or imaginary, and dramatic representations of well-known stories. This gives the teacher an opportunity to correct common errors of speech, to suggest better forms of expression, and to encourage distinct and clear utterances. Constant repetition of such forms as: I saw; I did; they were, etc., is given in order to impress these correct forms on the child's mind, and to make them a habit of speech. Writing work is given in the form of short stories or descriptions, consisting of a few sentences, which must be commenced and ended correctly. The simple style of a friendly letter is also introduced here.

As the pupil now uses pen and ink in writing, great attention is paid to obtaining a free and easy, muscular movement. This is done by practicing a great variety of written exercises, and the constant supervision of all writing involved in spelling and composition work, to see that the movement gained in these is properly applied. Writing on the blackboard is continued, as it encourages freedom and self-reliance.

As regards arithmetic it might be said that this is the drill year for addition, subtraction and multiplication. If the child misses at this period a certain "line" upon lines, the "training" it cannot be made up to him afterwards. In order to prevent this constant drill from becoming monotonous and thus deadening the child's interest, the subject is presented in as great a variety of ways as possible. Use is made of the play instinct of the child, and he repeats the different tables and unconsciously fixes them in his mind while running up and down imaginary stairs or ladders, running around racetracks, climbing over rades. Operations in applying the hills, and running races with his imaginary simple rules are given by imaginary

visits to the market or to different stores, purchasing articles and making out bills for the same. Measurements are performed, using such units as inch, foot, yard, pint and quart, and the relation of parts to wholes, such as one-half, one-quarter, one-third, etc.

The aim of the geography and nature study in this grade is to help the child to better understand what he sees around him, to encourage him to investigate for himself and to broaden his sympathies and interests. To do this his attention is drawn to local factories and industries with their output, sources of food supplies, where, and from what common objects are obtained. He is encouraged to notice natural phenomena as clouds, rain, winds, temperature and seasons with their special characteristics. Physical conditions around the city are noted such as rivers, hills, trees, birds, etc. Attention is drawn to public buildings and places of historical interest. This all forms a good foundation on which to build the more formal geography of succeeding grades.

To excite an interest in history, the life and work of early explorers, inventors and heroes, is told in the form of stories. Comparisons are made between pioneer days and those of the present time, and the idea of the growth of a settlement to a city is developed. Pictures cut from magazines and papers, and the use of the sand table, make real and vivid many facts in history and geography, which are otherwise unintelligible to the child.

In teaching spelling an effort is made to impress particularly on the mind such words as the child needs to use in his written exercises and those within his own vocabulary. A constant repetition of such words being necessary, only three new ones are introduced each day, the rest of the period being taken up with reviews of former words. Pupils are encouraged to notice words on signs and wagons on the street, as this trains the eye to readily grasp correct form. Most pupils enjoy learning new words for themselves, either in this way or through their knowledge of phonics.

The fact that without a healthy body the mind is sadly handicapped makes the subject of hygiene always an important one. Talks are given to the pupils on the benefit of fresh air and sunshine, cleanliness of the body and clothing, and regular habits of eating, drinking, sleeping, and breathing. Breathing and upright position in walking and sitting is further impressed by suitable corrective and development exercises given in periods of physical training.

Art work is used as a means to open the minds of the pupils to beauty in form and color around them, and to give them another medium through which to express thought. Water colors, pencil, and charcoal are used, and pupils mix different tints for themselves from the three primary colors. They also illustrate stories, using pencil or charcoal. Handwork in form of constructing objects from stiff paper or cardboard is of great value in training the eye and hand, developing a sense of proportion and fixing habits of accuracy and neatness, while appealing strongly to the child's fondness for "making something real."

The music in this grade combines both theory and the study of songs suitable to the season of the year. Careful practice is given in scales and singing simple exercises from the notes.

"This, I presume, is a study in still life," remarked the Mere Man. "No, sir; that is a landscape," replied the Artist haughtily. "That is a March sunset." "Oh, pardon me, I thought it was a fried egg," apologized the Mere Man—Judge.

"I have a perfect horror of embolism," said Mrs. Twigger. "So have I," chirped Mrs. Flinders. "There is always some kind of epidemic threatening our peace of mind."—Birmingham Age-Herald.

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