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PORT HOOD HARBOUR: ITS PAST, PRESENT AND PROBABLE  
FUTURE.—By D. S. McINTOSH, B. A., M. Sc., *Professor of  
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INTRODUCTION

To an observant watcher by the seashore, the work of storm waves is readily apparent. The seeming ease with which the sand, pebbles and larger fragments of rock are moved about cannot fail to be noted. When the waves strike so as to make an oblique angle with the shoreline, the undertow is changed into a current which sweeps material along the coast instead of carrying it directly seaward. If the cliffs are reached by the storm, the waves hurl loose portions of rock from the beach against them, gradually wear them back, and sweep the debris along in the direction of advance. The shoreline is thus being worn away in one place and built up in another; the land mass is being reduced, while bars and shoals are forming on and near the strand line. With each succeeding storm this activity is repeated, and it needs but length of time to greatly alter the contour of the coast. Like most of the natural processes, the action of the waves along the shore is slow in making noticeable changes, and what is observed by one generation may be lost to the next. Hence, the necessity of records of change which may be invaluable to the future geographer.

The collection and preservation of data that had been neglected and were in danger of being forgotten was the motive that prompted the writer of this paper. Interest grew with the work, however, and its scope has been enlarged so as to present what, in the writer's opinion, is the probable development of Port Hood Harbour into a safe natural haven, the manner in which it became changed into a less safe refuge, and, likewise, to attract attention to the probable future of the port.

#### LOCATION OF PORT HOOD<sup>1</sup> HARBOUR.

The County of Inverness embraces the western side of Cape Breton Island from Cape St. Lawrence to the Strait of Canso. From Cape St. Lawrence, the general trend of the coast line is south-west for about eighty-five miles in a straight line to Cape Linzee near Port Hood, the shiretown of the County. From here it bends south with an easterly component and extends to Point Tupper, about thirty-five miles. Two islands lie off the coast to the south west of Cape Linzee and are a continuation of the north-east trending land to the north, and formed at one time an integral portion of it. The outer or Henry Island is over a mile beyond Smith Island, the larger of the two. The latter island is situated a mile from the mainland and opposite the town of Port Hood. Between Smith Island and the mainland is the harbour which is the subject under consideration. (See Fig. 1.)

#### EVENTS OF THE DISTANT PAST.

It is a *far cry* from the Port Hood Harbour of today to the time in which the coal-measures were laid down. The rocks around the harbour are associated with that period of time. They are

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1. Just au Corps (Just' au Corps) corrupted by the English to Chestico, was a former name for Port Hood. Mr. Brown in his History of Cape Breton, quoting from a report on the state of the island, says that "the Acadians had built small vessels during the winter of 1764-65 at Just au Corps seven leagues to the northward of the Gut of Canceau, for the French merchants at St. Pierre and Miquelon." There is added as a footnote:

"Mr. Morris states that during the French occupation of the island, fifty men were constantly employed at Just au Corps quarrying freestone for Louisburg and the French forts in the West Indies." Port Hood is the name used by Brown in reference to grants of land made during Macormick's administration, begun in 1787. This name appears also on Desbarres' charts, and was given the place in honour of Admiral Hood of the British Navy.

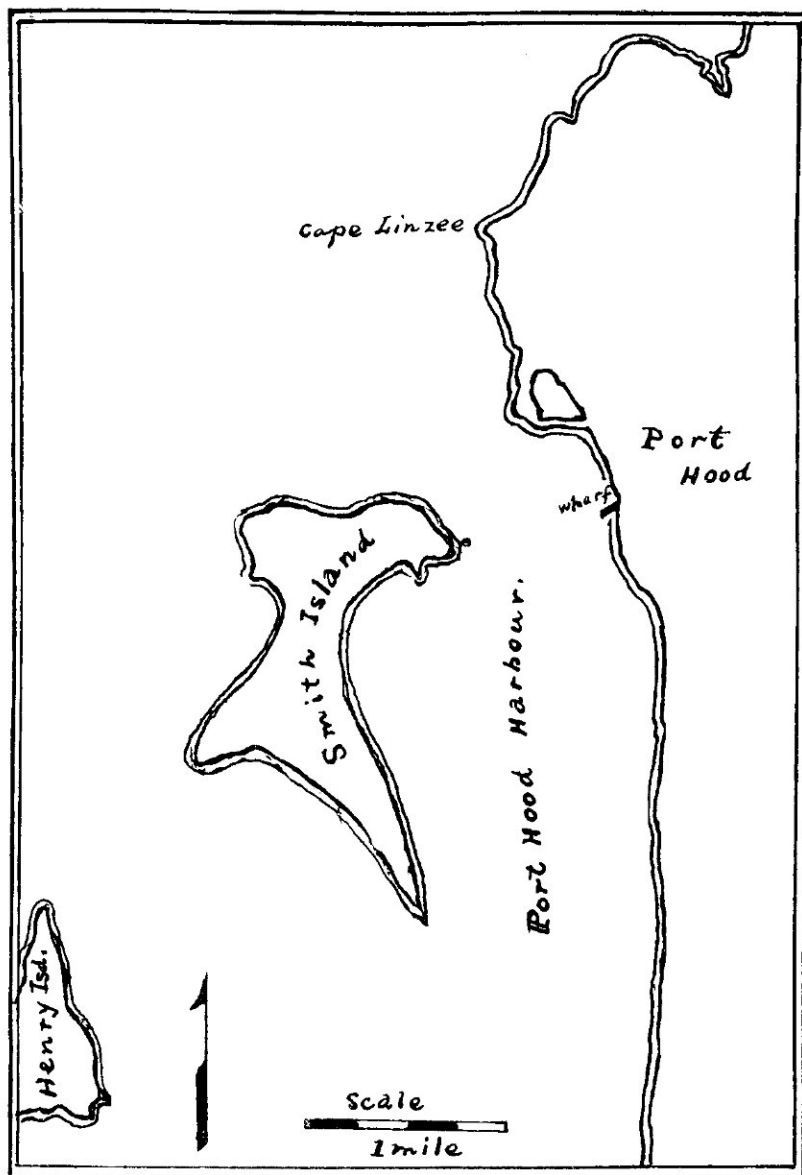


FIG. 2. SKETCH-MAP. PORT HOOD HARBOUR OF TO-DAY.

sedimentary, and one must realize that there was a time in the long, long ago when here was a shallow sea in which sand and mud were being deposited in alternating beds with layers of gypsum and sea-shells, and where at various times great swamps existed in which grew the vegetation from which the coal of today resulted. A glance at a geological map of the Island will show that what is now Cape Breton was then a much smaller land area made up of individual parts into and around which the sea extended. It had, however, topographical features similar to those of the present landscape, as the valleys of today are found to be floored by these same sedimentary rocks that are seen at Port Hood. The plateau of older rock that today occupies the larger part of the north and interior of the Island existed as today, but the sea entered all the old valleys drowning the rivers for a long distance towards their sources. Through succeeding ages, the sediment laid down in the sea was changed. The mud, sand, and gravel became consolidated into hard rock; the shells became limestone; the vegetation, coal; and the gypsum grew firmer. Slowly the land emerged from the sea, and not unlikely the area where is now the Gulf of St. Lawrence became land, and the old St. Lawrence and other streams made their way seaward and emptied far beyond the coast line of today. Onwards through the vast stretches of time the land was undergoing change—now elevation, now subsidence; but always were the sub-aerial forces at work removing material from a higher to a lower level, and the ocean waves beating upon the coast tearing away here and building up there. A general subsidence of the land allowed the sea to flood the lower course of the St. Lawrence and cover a large part of the surrounding area, and thus brought about the St. Lawrence Gulf, the waves of which are now pounding upon the Inverness coast. A period there was also, during which the whole country was covered by ice as Greenland is today, and this event also left its impress upon the land. These long-continued processes, at length, resulted in the physical features of today with a somewhat more extensive land area.

#### THE LESS DISTANT PAST AND ORIGIN OF THE HARBOUR.

In the less distant past, the land stood some scores of feet higher in relation to the sea than it does today. The continuous

action of the waves was, however, gradually reducing the extent of the land, and its height was being lessened by weathering and running water. In the course of time a line of weakness was found on the seaward side, and a portion was detached from the land mass and formed Henry Island.

It cannot be stated with certainty how the harbour came into existence, but there is evidence that points strongly to the probable way. Its location was an area of structural weakness. (See Fig. 1.) The rocks on the present landward side and on the greater part of Smith Island form a part of the Coal Measures. Smith Island has a fringe of the Lower Carboniferous on the northern end, showing also on both sides on the shore underneath the rocks of the Coal Measures. Here is the contact of the two formations, and the upper beds of the lower series consist of soft shales, gypsum, marl, etc. which yield easily to eroding forces. The harbour length is along the strike of these rocks. It is not unlikely, also, that this is a broken or faulted area. The soft rock and the attitude and conditions of the beds were, thus, such as to lend themselves readily to rapid wear whether by sub-aerial or wave processes. The slope of the land was in all probability southward, and it may be said with a good deal of certainty that a gentle sloping valley developed about the middle portion of the area largely through stream and general erosion and that it lay open to the south. A slow subsidence of the land bringing it to about the present level allowed the sea to enter this valley depression. The sinking of the land was general along our coast. All our rivers show it. The sea enters their lower courses. Mabou river, some few miles north of Port Hood, has its lower valley drowned. The tidal waters extend inland to Mabou village some five miles. A depth of fifty feet of water in the Mabou river channel would indicate a sinking of that extent at least, probably much more, as the channel bed has silted up largely since the subsidence. The harbour of Port Hood thus began as a submerged valley of erosion. On the northern side of the depression the rocks were more resistant hard sandstone and withstood the wave attacks and the general weathering, so that the harbour lay sheltered from the northern gales by a neck of land perhaps a half-mile wide.



Fig. 2. PORT HOOD HARBOUR. (Reduced from Desbarres' Chart, 1781.)

## EVIDENCE OF FORMER LAND CONNECTION.

The discussion up to this point has been based upon known geological changes in the earth's history, and the probable results of processes at work under conditions that very likely existed. That they may be questioned, the writer is well aware. No doubt, however, exists as to the presence of a land connection where is now the northern entrance to the harbour.

In the Legislative Library at Halifax are three volumes of unique charts owned and used by Admiral Lord Nelson, and presented to the Library on August 21st, 1885, by Vice-Admiral Sir J. E. Commerell, K. C. B., V. C. They were published for use of the Royal Navy of Great Britain by Joseph F. W. DesBarres, and bear the date of 1781. Two of these charts, plates 3 and 33, are of the western coast of Cape Breton and show the harbour of Port Hood, with the depths of water in the harbor and around the coast. Henry Isle is separated from the nearest land by shallow water with two narrow channels three fathoms deep. What is now Smith Island is joined to the mainland and the connecting neck is marked "Sand hills," but at four places, two near each end of the neck, is the conventional sign for "Cliffs of red earth." (See Fig. 2.) These red banks must indicate underlying rock above high water mark. It is probable that the original rock extended from each side, and that towards the middle the sea had worn it down, so that at high tide or during heavy gales some water passed to and from the harbour. The customary sand grasses would cover the sand hills.

On the plate, a part of which is shown in Figure 2, is the following in engraved script;—"Port Hood, situated on the north-western extremity of the Island of Cape Breton, bears by compass North 4° East distance twenty miles from the north entrance of the Gut of Canco, and East 8° South 17½ miles from Cape George. The Flood Tide sets from ye Northward at from Cape George. The Flood Tide sets from ye Northward at the rate of one and half miles an hour and on the days of Full and Change it is High Water at half-past seven. Common Spring Tides rise about five feet. To sail in, keep your course to the Eastward till Point Emersion is on with the Gut of Canso; this direction will lead you into no less than six fathoms water, and close by the end of the Sand Flatt which runs from the South-east part of the Peninsula, here are two small remarkable white

beaches at the bottom of the cliffs. When the Southermost bears W. by S. you may haul around by the anchorage in four and five fathoms water and muddy bottom, where ships may lie well sheltered from all winds. The water on the Flatts appears very white, and breaks when ye wind blows strong from the southward.

“There is a passage for small vessels between Point Susannah and Henry Isle.”

In the Crown Lands Office in Halifax are old land grants which show that late as 1826 the northern entrance was closed. On one grant the connecting strip of land is divided into cross lots from end to end of the neck, six in all, evidently for fishing purposes. The narrowest part of the neck on this grant, which bears date of 1826, is about six chains. There appears to be some doubt about the accuracy of these plans, as a grant of 1823 on which the land connection is much narrower has written upon it: “A dependance can be placed on this plan.—T. Crawley, Sur-General.”

There is also available evidence of personal recollection. The writer is indebted to Mr. N. H. Meagher, until recently a Judge of the Supreme Court in his native province, for the following: “My father came to Nova Scotia about 1820 or 1821 and for a time lived at Port Hood. At that time there were a number of Smiths living on the inner Port Hood Island. A daughter of one of these married a man named Hayes—a Catholic. The visit of the priest to Port Hood at that time was a very rare event, and when one came, my father was sent over to the island to notify the Hayes family of his presence on the mainland. Sometimes he made the journey to the Island on foot, and at others on horseback. At that time a small stream would cross the sand bar when high tides occurred—and only then.”

#### THE IMMEDIATE PAST.

There is, therefore, accurate knowledge of Port Hood Harbour as it existed somewhat less than a hundred years ago. As a haven for ships it ranked high. It was excellently protected from wind and wave. Lying open to the south-west, it would not be affected much by a storm from that quarter as the reach of outside water in that direction is not great. The approach lay open giving easy accessibility. The channel was sufficiently wide with a depth at the shallowest part of six fathoms. No



bars obstructed it, although a sand shoal had built out nearly half the width from the western side about a third of the distance from the mouth. There was, however, sufficient water in a wide channel east of this. The depth of water in the harbour varied from four to six fathoms. The anchorage was safe. There was freedom from strong or high tides and from fog. One drawback it had then as now, ice interfering with navigation for something like three of the winter months.

*A False Move and Serious Results.*—The abundance of fish around this coast early attracted men to the sea. The homes of the fishermen were around the harbour, but the best fishing grounds lay to the north. To reach the banks it was necessary to make a wide detour south and around the island. A channel for boats could easily be made across the isthmus from the head of the harbour to the open sea. This would be a great convenience. Accordingly at the lowest part of the beach a passage for boats was cut through. This was left unprotected in any way, and soon the waves and currents widened it making great inroads on both sides, until at the present day the channel is about three-quarters of a mile wide with a maximum depth of one and a-half fathoms. In less than a hundred years, therefore, a neck of land three-quarters of a mile in length has been removed by the ceaseless action of the waves.

*The Change a Gradual One.*—For a time after the opening of the northern entrance, the harbour retained its main former characteristics. Fishermen from other parts frequented the fishing grounds and sought refuge here. Some three-score years ago when the "North Bay" was the favorite mid-summer haunts of the American mackerel hookers and seiners, Port Hood was a noted rendezvous. More than a hundred schooners of the fleet were often at anchor at one time in its capacious harbour. Many interesting accounts of the time are related of the encounters between law-breakers and coastal-guard cutters. Our own countrymen were often to be found among the fishermen, and frequently figured in the escapades. Capt. Patillo of the schooner "Highland Lass" seems to have been one of the ablest and most daring of these mackerel catchers. His ability to locate fish was well known. Should the fleet be around the Magdalen Islands at night-fall, and in the morning the "Highland Lass" be missing, Patillo had surely sailed for Port Hood

through the night, and accordingly the whole fleet would follow. His hair-breadth escapes from the cutters were also the common property of the fleet.

#### THE PRESENT CONDITIONS.

The removal of the land protection on the north left the harbor open to the northerly and northeasterly gales which are the most severe along this coast. The seas sweep in and it is difficult to maintain a wharf on the Port Hood side. The land on both sides of the harbour has suffered much from the waves. In this connection, Mr. Meagher says: "In my own recollection when I went to school at Port Hood in the winter of 1863 the land extended out, I am quite sure, as far as, if not further than the head of the present public wharf. There was an old Catholic Church, the first at Port Hood, situate some distance to the southward and eastward of the present pier, and was, I believe, as far out from the present shoreline as the head of the pier. There were some old buildings there too—one of them a store belonging to Peter Smythe. They disappeared years ago. I am under the impression that there was an old meeting house there too. The school boys in the spring of the year were in the habit of going to the shore and having contests to see who threw down the largest area of sod which had been undermined several feet by the action of the sea." The harbour has silted up to some extent at the middle and at the southern end, and many of its fine features as a haven of refuge are gone. It now partakes of the type of harbour determined by a shelter behind an island. In this regard it compares favourably with others of that type. The old anchorage still remains with Smith Island serving as a protection from the north and west winds. The island side serves also as a safe shelter for the fleet of fishing boats, and a site for the wharves and buildings connected with the fisheries which continue to be valuable. On the mainland side towards the southern entrance, a coal shipping pier was built some years ago. It appears not to have been adversely affected by the waves, but the shifting sands have, doubtless, lessened the depth of water around.

#### THE PROBABLE FUTURE.

In the ordinary course of natural events, the harbour must be destroyed, providing the coast remains stationary. The

island is wearing away somewhat rapidly. For thousands of years, however, it may exist as an inferior type of natural haven, and serve as a port. The current through the northern entrance is such as to preclude the probability of the island being in time tied to the mainland by a sand bar, and thus renewing the old condition.

What nature may not do, may, however, be done by man. It is possible to close the northern entrance artificially. The attempt was begun in 1903 when the sum of nearly three thousand dollars was spent. Work on the project was continued each succeeding summer up to 1912, the whole expenditure being upwards of one hundred and thirty-five thousand dollars. The plan of operation consisted in building a structure across the channel from a point a short distance above the public wharf to extend to the nearest point on the island. Stout twigs were made into mattresses, these sunk and ballasted. Work was done on both sides of the channel, but has not been resumed since 1912. The project is referred to by the Chief Engineer as the "proposed closing of the northern entrance," and he says "the estimated cost is approximately five hundred thousand dollars at present prices for labour and material."

But a new danger threatens the sheltered portion of the harbour. On the northern end of the island about 250 feet from the shore at the channel, there begins a weak place in the rock, and this extends westward for about 600 feet. This is probably the same kind of rock and structure which led at first to the depression that formed the harbour. The cliff here is about 30 feet high and from it the ground slopes southward for about 650 feet to a pond on a level with the sea. This pond is separated from the best sheltered part of the harbour by a narrow sand beach about 60 feet wide over which at very high tides the sea enters the pond. Now this northerly facing cliff of soft rock is rapidly wearing away under the attacks of the northerly storms. Last year, it is stated, the sea advanced about 15 feet. As it is cutting into a southerly sloping area, it is likely to progress more rapidly as the work goes on, unless the increasing length of the cove it forms becomes a deterring factor. It is, at any rate, evident that in fifty years or so, this place may be cut across and a small island be left where is now the headquarters of the fisheries for the Port

Hood Island. This part of the island, therefore, needs to be protected artificially to preserve the present harbour.

Like many other harbours, that of Port Hood has a tragic side to its history. On December 17th, 1876, the schooner *Maggie H*, Capt. McLellan, from Bonne Bay, Newfoundland, was wrecked there. The newspaper report describes her as a vessel of 90 tons register, 10 years old, built at Boston and owned by Capt. Murdoch McLellan of Port Hawkesbury. Besides the crew of nine men, there were on board, as passengers, a man and his wife and three children. Two members of the crew and the three children were lost. The remainder of the crew and passengers were rescued by Mr. H. A. Smith, of Port Hood Island, and his three brothers, each of whom received a silver watch from the Government in recognition of his humane act. The newspaper of the same date contains also the following:—"A despatch to the Marine and Fisheries received yesterday states that the barque *Minerva* of Charlottetown was ashore at Port Hood, full of water, and was breaking up. The second mate was drowned in attempting to land."

In the preparation of this paper the writer has received valuable help from several sources. He wishes to acknowledge his indebtedness to Mr. Harry Piers of the Provincial Museum, who acquainted him with the presence of the charts in the Legislative Library, to Miss Donohoe, the efficient librarian of that institution, to Mr. R. M. Smith, of Port Hood Island, for information and some measurements on the island, to the officials of the Crown Lands Office, and to Dr. A. W. Chisholm, M. P. for Inverness County, for statistics regarding the work of closing the northern entrance to the harbour. Grateful acknowledgements are due also to Mr. N. H. Meagher, who took a keen interest in the work from its inception, and furnished material and helpful suggestions.