



COAST EROSION AND ACCRETION

TIDAL LANDS: A study of Shore Problems. By A. E. CARBY, M. FISH, C. B. BOAD, and W. OLIVER, F. R. S., London, Blackie, 12s. 6d. net. IN 1906 a Royal Commission was appointed to inquire into questions affecting coast erosion and reclamation of tidal lands in the United Kingdom. A thorough and exhaustive investigation resulted five years later in the issue of a report containing recommendations for the institution of central and local authorities charged with the administration of the coast-line in the interests of sea defence and with the initiation and control of schemes of reclamation. Lack of action by the Government has led to the addition of another work to the vast literature already in existence dealing with the multifarious and complex problems affecting our shore lines and insisting on their national importance. It may be said at once that the appearance of this volume is justified by the fresh and suggestive way in which the subject matter is treated. The collaboration of an engineer and a botanist is a step in the right direction, for a satisfactory treatment of shore problems involves the aid of many sciences. The authors recognize the all-important principle that man must follow Nature's lead. "Nature is conquered by obeying her, and man is but her puppet until he learns the lesson of obedience." We are reminded again and again that the work of the maritime engineer consists to a large extent in encouraging the sea to set up natural defences against its own assaults. Unless the sea is coaxed to build up, it inevitably tends to destroy land. Holland is a shining example of what can be done in the way of protection and reclamation by a patient study of the play of natural forces and the application by engineers and horticulturists to coastal problems of the knowledge so obtained. Explanations are given of the art as practised by the Dutch engineers. Easy slopes on which sea forces may expend themselves are shown to be more efficient than upright walls pushed forward to near the high-water line. Disaster is invited by taking undue liberties with such a ruthless agent as the sea. A glaring instance is the destruction of Hallands, Devon, following the dredging of sand and gravel from the fore-shore and sea-bed opposite the village. Much useful information is afforded as to the construction of sea-walls and groynes, the importance of land-drainage where high ground abuts the shore, the method of reclaiming silt land by warping, the shutting up of breaches in river and sea banks, and kindred subjects. Many years devoted by Professor Oliver to the study of shore plants at the Bouche d'Erquay in Brittany, Blakeney Point, Norfolk, and elsewhere, have fitted him for the consideration of methods in which vegetation may be utilized by man for conserving and reclaiming tidal and coastal lands. The chapters dealing with these problems are extremely interesting. Details of the topography of sand-dunes, shingle beaches, and salt-marshes are given with a description of the vegetation characterizing each type of terrain and of the part played by the more important forms in consolidation and accretion. It is pointed out that the outstanding feature of tidal and maritime lands is their surface mobility. The special quality sought for in plants is capacity to reduce this mobility and to raise the level by accretion. Great importance is attached to the power of rapid growth through the material as it accumulates—the end desired being to make the action automatic and continuous. The technique of sand-dune formation as developed in Gascony and on the shores of the Russian Baltic is lucidly described. A littoral dune is artificially built up and methodically planted with psamma. The dunes within this barrier are then planted with seedling trees—pines, alders, and birches. Flourishing plantations of maritime species south of Bordeaux have proved a commercial success by their yield of resinous products and timber. Psamma-planting in the Southport area and the pine woodlands on the dunes at Holkham, in Norfolk, are cited as exceptional experiments in this country. The authors hold that the wide sandy wastes along our coasts should be exploited, and they refer to the possibility of using psamma as a substitute for esparto grass in the manufacture of paper. The afforestation of large stable beaches such as occur at Dungeness, Rye, and Orfordness offers a prospect of success. On the mobile shingle of spits and bars the shrubby sea blite (Suaeda frutescens) is the most important beach strengthener. "Vegetable groynes" formed of young trees of the grey alder have proved successful in the arrest and fixation of shingle on the banks of the River Ticino in Switzerland. It is not impossible that massive ligneous plants tolerant of sea water will be evolved at some future time by the plant breeder for a similar purpose on foreshores. The developmental phases of the salt marsh are traced step by step. Pioneer plants of the low marsh ("slob land")—sarcocornia zosteria, algae, and other forms—are gradually replaced by the glyceria and armeria swards of the high marsh ("saltings"), with a juncus belt where higher ground adjoins the mainland. Each stage paves the way to the next. In different types of locality different plants play an important part. The recent appearance and rapid spread along the south coast of England of spartina (the "rice grass") has attracted the attention of all who are interested in the utilization of salt marshes. This remarkable plant is pre-eminent in its capacity for consolidating and building up soft muddy flats and converting them into continuous meadow. It promises to be unequalled as a natural reclaimant, but the effects of its rapid growth in navigable waters must be carefully watched. Investigations as to the economic value of spartina grass for litter, forage, and as material for the manufacture of paper have still to be carried out. When a marsh is ripe for inclusion the aid of the engineer has to be invoked for the construction of sea banks. The art known as the "winning" of saltings and marshes in Britain goes back at least to the Roman occupation. Many acres of rich agricultural land were won from the sea in those far-off days, and again during the Tudor and Stuart periods. If, as the prospects of agriculture again become bright, the practice is to be renewed where the natural conditions are favorable, the control of this as of all other operations affecting the coast should be exercised by a central authority equipped with a staff of scientific experts.—The Times Literary Supplement.

NOTICE TO MARINERS

MARITIME PROVINCES (138) St. John, N. B., and Halifax, N. S., Time Balls Former notice—No. 29 (65) of 1918. St. John and Halifax Time Balls—On and after 1st August, 1918, the Time Balls at St. John and Halifax will be dropped at 1 P. M. Atlantic or Standard time of the 60th Meridian west longitude, equivalent to 5 hours Greenwich Mean Time. NOVA SCOTIA (139) Southwest coast—Seal Island—Change in character of fog alarm. Position.—On south end of Seal Island. Date of alteration.—On or about 1st September, 1918, without further notice. Alteration.—The steam fog whistle will be replaced by a diaphone, operated with air, compressed by an oil engine. The diaphone will give a double blast every minute, thus: Blast Silent Interval 4 secs. 4 secs. 48 secs. NEW BRUNSWICK (144) Bay of Fundy—Chance harbor; Dipper harbor; Musquash harbor; and Lorneville harbor—Plans issued. New chart—A chart entitled "Plans of Harbors," (comprising plans of Chance harbor, Dipper harbor, Musquash harbor, and Lorneville harbor), numbered 414 of the Canadian Hydrographic Survey, has just been published by the Hydrographic Survey, Department of the Naval Service of Canada. Copies may be obtained from the Department of the Naval Service, Ottawa, for fifteen cents per copy, payable in advance. CANADA (151) Ship Protests—Modification of proceedings. Under the authority of an Order in Council dated the 2nd day of July, 1918, Collectors of Customs at ports of entry on the Pacific and Atlantic, including ports on the Gulf and River St. Lawrence up to and including the Port of Montreal, are authorized, during the present war, to do any notarial act for the purpose of noting and extending ship protests, and are authorized to receive any statutory declarations required in connexion therewith. The Masters of all British ships have been instructed that no note of protest of loss or of any occurrence whatsoever arising in respect of their ships is to be made by them in the Dominion of Canada except before a Collector of Customs. Collectors of Customs are instructed, when the Master of a British ship reports inwards and when issuing a clearance to a British ship, to direct the attention of the Master of such ship to the above requirements. NOTE: Protests by Masters of British ships trading on the inland waters of Canada, or protests in respect of loss or other occurrence arising while a British ship is on any of the inland waters of Canada, do not require to be made before a Collector of Customs. In such cases the Master may follow the usual and existing practice. For the information and guidance of Collectors before whom a Master may present himself in connexion with Ship Protests, it should be stated that a Protest may be made in the first instance, or the Master may desire to make a Note or Entry of Protest only, which may later be extended to a regular protest before the same or another Collector of Customs. The Note or Entry of Protest is merely a notice of the Master's intention to protest, should an extended protest afterwards become necessary or advisable. A Note or Entry of Protest, also a Protest—if made in the first instance—should be made as soon as possible after the arrival of the ship in port. If made later than twenty-four hours after arrival, it should contain a brief statement of the cause of the delay. Note or Entry of Protest forms, Protest forms, and Extended Protest forms, may be obtained from Collectors of Customs. The Note or Entry of Protest should be made in duplicate, signed by the Master and formally certified by the Collector, and one copy retained by the Collector and placed on file. When a Protest is made or extended, the original is to be retained and filed by the Collector, and certified copies are to be given or mailed to the Master and to the Owner of the ship. Lachine, Que., 25th Sept., 1908. Minard's Liniment Co., Limited, Gentlemen.—Ever since coming home from the Boer war I have been bothered with running fever sores on my legs. I tried many salves and liniments; also doctored continuously for the blood, but got no permanent relief, till last winter when my mother got me to try MINARD'S LINIMENT. The effect of which was almost magical. Two bottles completely cured me and I have worked every working day since. Yours gratefully, JOHN WALSH

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MINIATURE ALMANAC

Table with columns for Day of Week, Day of Month, Sun Rises, Sun Sets, H. Water, L. Water, and L. Water. Includes data for August and September.

The Tide Tables given above are for the Port of St. Andrews. For the following places the time of tides can be found by applying the correction indicated, which is to be subtracted in each case: Grand Harbor, G. M., 18 min. ... Seal Cove, 30 min. ... Fish Head, 11 min. ... Welshpool, Camp, 6 min. ... Eastport, Me., 8 min. ... L'Etang Harbor, 7 min. ... Lepreau Bay, 9 min. ... H.W. L.W.

PORT OF ST. ANDREWS. CUSTOMS Thos. R. Wren, C. Collector. D. G. Hollins, Prev. Officer. D. G. Hanson, Prev. Officer. Office hours 9 a.m. to 4 p.m. Saturdays 9 to 11 a.m. OUTPOSTS INDIAN ISLAND. H. D. Chaffey, Sub. Collector. CAMPBELL. W. Hazen Carson, Sub. Collector. NORTH HEAD. Charles Dixon, Sub. Collector. LORD'S COVE. T. L. Trearthen, Sub. Collector. GRAND HARBOR. D. I. W. McLaughlin, Prev. Officer. WILSON'S BRACK. J. A. Newman, Prev. Officer.

SHIPPING NEWS PORT OF ST. ANDREWS The publication of the usual shipping news in this column is suspended for the time being in patriotic compliance with the request issued to all papers by the Admiralty. CHARLOTTE COUNTY REGISTRY OF DEEDS. ST. ANDREWS, N. S. George F. Hibbard, Registrar. Office hours 10 a. m. to 4 p. m., Daily. Sundays and Holidays excepted. SHERIFF'S OFFICE ST. ANDREWS, N. S. R. A. STUART, HIGH SHERIFF. Time of Sittings of Courts in the County of Charlotte:—Circuit Court: Second Tuesday in May and October. County Court: First Tuesday in February and June, and the Fourth Tuesday in October in each year. Judge Carleton.

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THE FIRST WEEK IN SEPTEMBER Is the beginning of our busy season, but students can enter at any time, and it is well to get the "Ice Broken" before the rush begins. Tuition Rates and full information mailed to any address.

S. Kerr, Principal. I have opened my Cottage for a few Guests. Terms: \$3.00 per day. Apply to ISABELLE VENNELL, Campbello, N. B. (FAMOUS SUMMER RESORT)

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MARITIME STEAMSHIP CO., LTD. TIME TABLE On and after June 1st, 1918, a steamer of this company leaves St. John every Saturday, 7.30 a. m., for Black's Harbor, calling at Dipper Harbor and Beaver Harbor. Leaves Black's Harbor Monday, two hours of high water, for St. Andrews, calling at Lord's Cove, Richardson, Letite or Back Bay. Leaves St. Andrews Monday evening or Tuesday morning, according to the tide, for St. George, Back Bay, and Black's Harbor. Leaves Black's Harbor Wednesday on the tide for Dipper Harbor, calling at Beaver Harbor. Leaves Dipper Harbor for St. John, 8 a. m., Thursday. Agent—Thorne Wharf and Warehouse, Inc., Ltd., Phone 2581. Mgr., Lewis Connors. This company will not be responsible for any debts contracted after this date without a written order from the company or captain of the steamer.

CHURCH SERVICES PRESBYTERIAN CHURCH—Rev. W. M. Fraser, B. Sc., Pastor. Services every Sunday, 11 a. m. and 7 p. m. (7.30 p. m. during July and August) Sunday School, 9.30 a. m. Prayers, Friday evening at 7.30. METHODIST CHURCH—Rev. Thomas Hicks, Pastor. Services on Sunday at 11 a. m. and 7 p. m. Sunday School 12.00 p. m. Prayer service, Friday evening at 7.30. ST. ANDREW CHURCH—Rev. Father O'Keefe, Pastor. Services Sunday at 10.30 a. m. and 7.30 p. m. ALL SAINTS CHURCH—Rev. Geo. H. Elliott, B. A., Rector. Services Holy Communion Sundays 8.00 a. m. 1st Sunday at 11 a. m. Morning Prayer and Sermon on Mondays 11 a. m. Evenings—Prayer and Sermon on Sundays at 7.00 p. m. Fridays, Evening Prayer Service 7.30. BAPTIST CHURCH—Rev. William Amos, Pastor. Services on Sunday at 11 a. m. and 7 p. m. Sunday School after the morning service. Prayer Service, Wednesday evening at 7.30. Service at Bayside every Sunday afternoon at 3 o'clock except the last Sunday in the month when it is held at 7 in the evening.

The Parish Library in All Saints' Sunday school Room open every Wednesday and Saturday afternoon from 3 to 4. Subscription rates to residents 25 cents for two books for three months. Non-residents \$1.00 for four books for the summer season or 50 cents for four books for one month or a shorter period. Books may be changed weekly.

ST. ANDREWS POSTAL GUIDE. ALBERT THOMPSON, Postmaster. Office Hours from 8 a. m. to 8 p. m. Money Orders and Savings Bank Business transacted during open hours. Letters within the Dominion and to the United States and Mexico, Great Britain Egypt and all parts of the British Empire, 2 cents per ounce or fraction thereof. In addition to the postage necessary, each such letter must have affixed a one-cent "War Tax" stamp. To other countries, 5 cents for the first ounce, and 3 cents for each additional ounce. Letters to which the 5 cent rate applies do not require the "War Tax" stamp. Post Cards one cent each to any address in Canada, United States and Mexico. One cent post cards must have a one-cent "War Stamp" affixed, or a two-cent card can be used. Post cards two cents each do not require the "War Tax" stamp. Newspapers and periodicals, to any address in Canada, United States and Mexico, one cent per four ounces.

Arrives: 11.55 a. m.; 10.55 p. m. Closes: 6.25 a. m.; 5.40 p. m. Mails for Deer Island, Indian Island, and Campbello—Daily. Arrives: 11 a. m. Closes: 12.30 p. m. All Mails for Registration must be Posted but to be previous to the Closing of Ordinary Mail.

Readers who appreciate this paper may give their friends the opportunity of seeing a copy. A specimen number of THE BEACON will be sent to any address in any part of the world on application to the Beacon Press Company, St. Andrews, N. B. Canada.

THE BEACON SATURDAY, AUGUST 31, 1918