

SCIENCES IN CANADA

PROF. RAMSAY WRIGHT LECTURES
ON MARINE BIOLOGY.

The Relationship of Animal and Vegetable Life in the Sea—A Popular Science Talk Before the Royal Society at Ottawa—Some Problems Which the Lecturer and Other Canadians Are Attempting to Solve.

One of the popular science lectures which has become a recognized feature of meetings of the Royal Society in Ottawa, was delivered by Prof. Ramsay Wright of Toronto. The selection of his subject, "Some Problems of Marine Biology," was determined by the circumstance that he has been appointed as assistant director to collaborate with Professor Prince in taking charge of the Marine Biological Laboratory of Canada, which has been stationed for two seasons at St. Andrew's, New Brunswick. For the present season Canso, Nova Scotia, has been chosen as a suitable site for the station on account of the magnitude of the fishing interests, of which it is a centre. Attention was called to the fact that of the twenty millions of dollars which represent the annual yield of the Dominion fisheries more than one-third is contributed by Nova Scotia.

After some reference to other biological stations which have been established either primarily for scientific research, such as that at Naples, or avowedly in the interests of the fisheries, such as the United States Fish Commission Laboratory at Woods Hole, Massachusetts, the lecturer proceeded to describe the Canadian Laboratory, and insisted on the identity of the interests of science and of the fisheries in the investigations to be made there.

Two problems were discussed, one of chiefly scientific interest, the relationship of animal and vegetable life in the sea; the other, more economic in its bearings, the relative productiveness of land and sea. With regard to the former, it was argued that all animals, whether on land or in the sea, must live, either directly or indirectly, on vegetable food, but that, whereas on land the vegetation is obvious and the herbivorous animals often of large size, in the sea the vegetation is composed of microscopic plants, invisible to the naked eye, which are everywhere distributed through the surface layers of the ocean, and the animals which feed upon these are little larger in their dimensions. The more obvious marine animals, on the other hand, are all carnivorous, and thus there appears to be a surplus of animal life in the sea over its vegetation—that this is only apparent is shown by dragging a net of fine bolting silk through the water, the meshes of which measure 1-200th of an inch each side. Such a net secures most of the organisms of the floating population—called "plankton" to distinguish it from the population of the shores and of the bottom of the sea—although many of the smaller plants are still able to escape through such apertures.

The plants so secured belong chiefly to two families, the Peridinia and Diatoms, in both of which remarkable adaptations to a floating life are observed. The various species come to their maximum at different periods, and are sometimes extraordinarily abundant, so that it has been possible to compare the volume existing underneath an acre of water surface to the annual yield of an acre of meadow land in hay. Chemical analysis shows that the plankton plants are just as nutritious as good hay, and has thus cleared up the mystery of the primitive source of food of the marine animals. One singular result of these studies is that our northern colder waters are far richer in such vegetation than the warmer regions, and the paradox may be stated that a really tropical luxuriance of these marine meadows is only to be met with towards the poles. Twenty times as much microscopic vegetation has been found off the coast of Greenland as has been measured in the Straits of Messina; it is doubt-

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Could we read the hearts of women what a vast amount of suffering would be exposed. Female weakness has produced more invalids among women than any other cause. Have you any of the following symptoms? Nervousness, Weakness, Backache, Headache, "All Gone" Feeling, Hot Flashes, Variable Appetite, Restlessness, No Ambition, Easily Excited, Painful Periods, Bearing-down Pains, Leucorrhoea, Pimples on the Face, Pains in the Loin, Eyes Sunk, No Vital Energy, etc. We Can Cure You. It matters not who has treated and failed in curing you. Consultation by Mail is Absolutely Free, and if curable we will tell you so. Don't let surgeons operate on you. We can cure you without cutting. Our New Method treatment is mild and pleasant. Family doctors have treated you for years yet you are not cured—they only help you from time to time. Let us cure you at your own home by our New Method Treatment. Hundreds are being cured. Why not you? We will mail you our Symptom Blank simply for the asking, and we will tell you free of charge what we think of your case. Remember, your letters are kept strictly private and confidential and are answered in plain sealed envelope. Write at once, enclosing stamp for reply. Address Dr. W. H. Saunders & Co., Sta. C., Chicago, Ill. Mention this paper.

Dec. 21, 1900, dwalry.

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Mr. D. N. Spencer, 11 Coolmine Ave., Toronto, writes:—"I have been troubled with catarrh and deafness for a number of years, finally I could not converse with any person at a distance. I spent much money on advertised remedies, and doctored with specialists in Toronto and Winnipeg (while there three years ago), but my hearing became no better. About a year ago I procured a bottle of Japanese Catarrh Cure. I afterwards followed up this treatment as directed, and shortly I found my hearing completely returned and my catarrh does not trouble me now in the least. I can conscientiously recommend it to any person troubled with catarrh or catarrhal deafness. Japanese Catarrh Cure is a volatile, healing made, pleasant to use, and permanently cures catarrh wherever located. Sold by all druggists; or mailed, price, 50 cents, by The Griffin & Macpherson Co., Limited, 121 Church St., Toronto.

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less owing to this rich vegetation furnishing an abundant food supply to the lower forms of animal life that our fisheries are so productive.

The various forms of minute plants and animals referred to were illustrated by lantern slides; the phosphorescence, which is so frequently exhibited by them, was attributed to the oxydation of particles of fat, becoming more intense on the application of mechanical, chemical and other stimuli.

Passing to the second problem, the lecturer stated that various comparative estimates have been made of the yield per acre of pasture land and fresh-water ponds in beef and fish respectively. While 75 pounds is considered an average yield in the one case, three or four times as much has been occasionally recovered in the case of ponds in which carp is cultivated. Statements were also made, based on figures furnished by Dr. Wakeham and Prof. Prince, that a certain area on the Labrador coast of twenty square miles yields as much as \$30 an acre, while the whole salmon fishery of the Fraser estuary may be estimated as yielding about \$10 per acre.

While it is impossible to fertilize the ocean or reap its whole harvest, or to weed out undesirable competitors, as may be done in a restricted area, yet it is possible to establish on scientific data what extent and methods of fishing are best adapted to secure the annual surplus production of food fishes without infringing on the capital, of which such annual increase must be considered as the interest. The method of estimating the number of adult food fishes in a certain area from the number of floating eggs was then explained.

The lecturer closed with the remark that it is impossible to predict when so-called purely scientific knowledge, apparently unrelated to practical life, may become of the vastest importance to mankind.

A Great Mistake.

She—The play was excellent except for one thing.

He—And what was that?

She—The time extends over three months, and it shouldn't be more than a week.

He—I don't see why.

She—Why? Because the same servant stays through it all.—King.

MEN!

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Sold and recommended by all
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Wood's Phosphodine is sold in Fredericton
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The Last Chance

For Buyers to get their share of the many genuine gilt edge bargains. Time is limited now as our Grand Fall Opening takes place Tuesday, September 3rd.



Two more days of big selling at any old price to make room for the new goods that are daily coming in. Read carefully through the items here offered, and remember it gives you but a slight idea of the many others to be found in our stores.

Ladies' Lisle Thread and Silk Gloves sold for 20c to 45c, for Friday and Saturday your choice for only 6c a pair.

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P. K. S., former price 15c to 18c, now only 8½c, all desirable patterns.

Ladies' Shirt Waists, 25c, 39c and 75c, just ½ their regular price to clear.

Shetland Floss Yarn this week for 7½c a bunch.

The balance of Summer Capes and Jackets clearing at a big reduction, prices start at \$1.75, \$2.25, \$3.50 and \$3.75 for the \$9.00 kind.

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Boys' Outing Shirts for 19c each, and the best for 33c, the usual 50 to 60c kind.

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Aug. 14, 1901.—d & w.

York & Carleton R. R.

Stanley Branch.

8.00 a. m. Mixed train leaves Stanley Village, connecting with Canada Eastern freight for Chatham, also with Canada Eastern Express for Fredericton, returning to Stanley 11.30 a. m.

2.00 p. m. Leave Stanley for Cross Creek Station, connecting with Canada Eastern freight for Fredericton, also with C. E. Express for Chatham, returning to Stanley 1.00 p. m.

Trains run on Standard time.

Stanley, Aug. 26, 1901.

D. R. MOORE,
General Manager.

Aug. 27, d m-w-f, w 3mos.

Boy Wanted.

A SMART BOY about 15 years of age with a fair education can obtain steady employment at the Herald Office.

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Specialist in Crown and Bridge Work.

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INTERCOLONIAL RAILWAY.

On and after Monday, June 10, 1901, trains will run daily (Sundays excepted) as follows:

TRAINS WILL LEAVE ST. JOHN

Suburban Express for Hampton..... 5.20
Express for Halifax and Campbellton... 7.15
Suburban Express for Rothesay..... 11.05
Express for Point du Chene, Halifax, and Pictou..... 11.20
Express for Sussex..... 16.30
Suburban Express for Hampton..... 17.45
Express for Quebec, and Montreal... 19.35
Express for Halifax and Sydney..... 22.45
Accommodation for Moncton and Point du Chene..... 13.00

TRAINS WILL ARRIVE AT ST. JOHN

Express from Halifax and Sydney..... 6.00
Suburban Express from Hampton..... 7.15
Express from Sussex..... 8.35
Express from Montreal and Quebec..... 11.50
Suburban Express from Rothesay..... 12.30
Express from Halifax and Pictou..... 17.00
Express from Halifax..... 18.35
Suburban Express from Hampton..... 21.55
Accommodation from Point du Chene and Moncton..... 14.15

All trains are run by Eastern Standard Time. Twenty-four hour notation.

D. POTTINGER,
General Manager

Moncton, June 6, 1901.

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ARRANGEMENT OF TRAINS

In Effect June 10th, 1901

LEAVE FREDERICTON

EASTERN STANDARD TIME

6.00 a. m.—Express for St. John, St. Stephen, St. Andrews, Houlton, Woodstock, and points north; Bangor, Portland and Boston. Parlor car Fredericton Junction to Boston.

7.50 a. m.—Mixed for Woodstock, Presque Isle, Edmundston and points north via Gibson Branch. Leaves St. Marys 8.25 a. m.

9.30 a. m.—Accommodation for Fredericton Junction, connecting with Express for St. John and points east, and Accommodation for McAdam Junction.

4.00 p. m.—Accommodation for Fredericton Junction, connecting with Short Line Express for Montreal, Ottawa, Toronto, and with the Imperial Limited from Montreal for the west, Northwest and Pacific Coast, also with Pullman express for Bangor, Portland, Boston, etc. St. Stephen, St. Andrews, Houlton, and Woodstock. Palace sleeper Fredericton Junction to Montreal and Lewis, P. Q. Pullman sleeper Fredericton Junction to Boston.

8.05 p. m.—Express for St. John and points east, and mixed train for McAdam Junction.

ARRIVE AT FREDERICTON

8.50 a. m.—From St. John

11.45 a. m.—From Boston, Montreal, St. Stephen, St. Andrews, Woodstock and Houlton, etc.

7.55 p. m.—Mixed from Woodstock and points north via Gibson Branch. Arrives at St. Marys 7.34 p. m.

7.15 p. m.—From St. John and east

9.15 p. m.—From Boston, Portland, Bangor, St. Stephen, St. Andrews, Woodstock, Houlton, St. John, etc.

All above trains run week days only.

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