

from which has accumulated on land as sand dunes, and has at several times been weathered to form soils, we see the significance of the chapter headings. Sayles' first suspicion that, because the present soil is post-glacial, earlier and buried soils might be interglacial, was his guiding star and it has been well substantiated by his later field work and proved beyond a doubt as the eighty pages devoted to the summation of the evidence shows.

It was the present writer's privilege to be associated with Sayles in Bermuda searching for gastropod fossils, remains of land snails which abound in many of the interglacial soils. It was our hope that sufficient differences could be found in the fossils of the typical soils to warrant making some species "guide fossils." This hope, however turned out to be groundless, at least as far as the limited work we were able to do was concerned. Sayles was therefore deprived of the most useful and time saving means of identifying his different interglacial soils here and there over Bermuda, and had to rely upon purely geological and climatological data. Although this correlation was extremely difficult, there seems to be no reason to question his results. The summary of the geological history of Bermuda cannot be stated any better than in Sayles' own words:

"The Bermuda volcanoes were erupted during the Tertiary, or earlier. By the end of the Tertiary they had been reduced to submarine plateaus. The most northeasterly and largest of these was elliptical in plan, essentially flat, and several hundred feet below sea-level. With the coming of the Pleistocene great quantities of water were subtracted from the oceans to form the continental ice-sheets. When the ice was at its maximum extent the strand-line fell as much as 260 feet below modern sea-level. While the ice-cap grew, large parts of the Bermuda banks, covered by mollusc shells and unprotected by vegetation, were exposed to the sweep of the winds and the dried sands were piled up in great dunes. The higher winds in the vicinity of the Bermuda of the Ice Age and the inevitable changes in flora were important factors favourable for the construction of dunes. When the sea rose at the close of each glacial stage, the source of supply for the dunes was buried beneath the ocean waves, the winds became less violent, and a permanent flora anchored the dunes. A long period of slow decay began, during which red and brown soils accumulated. Such conditions lasted for tens of thousands of years. But with the advent of a new glacial stage, conditions were once more favour-

able to the formation of dunes. Thus dune- and soil-forming conditions alternated during the Pleistocene."

We should remember that several million square miles of land surface in Greenland and the Antarctic are still under glacial ice. This ice, melting, will raise the level of the ocean a hundred feet or more. If we are really in *postglacial* time these ice caps should completely disappear, and the resulting rise in sea-level will reduce the area of Bermuda to a small fraction of its present exposure. This will probably take several tens of thousands of years to accomplish, so Bermuda will continue to be North America's playground and rest cure for centuries to come.—T. H. CLARK, Redpath Museum, McGill University, Montreal.

AN INTRODUCTION TO BIRD-STUDY IN BRITISH COLUMBIA by J. A. Munro. Published by the Department of Education, Victoria, B.C. pp. 99; 26 coloured plates, numerous half-tones and a number of line cuts in the text. The plates and text figures are republished from the *Birds of Western Canada*. The half-tones are new, from photographs by the author.

We are told in the Foreword that this book has been prepared primarily as an aid to teachers in the schools of British Columbia. It consists of two parts; the first, discussions of birds in general and those of British Columbia in particular; the second, a presentation of fifty characteristic birds of the Province individually treated. The various chapter headings and sub-headings indicate the scope of the first part. Under "The Value of Birds to Man" various groups of birds are broadly treated,—“Insectivorous Birds,” “Birds as Weed-destroyers,” “Gulls,” “Game Birds,” and “Rodent Pests and the Birds that Control Them.” There is a chapter on “The Enemies of Birds” and another on the “Distribution of Birds in British Columbia” with lists of species representative of the principal regional units of the Province. A chapter treats on “How to Study Birds” and one on “Bird Conservation” are included. In the bird list proper the individual species are treated at some length. The descriptions are brief and untechnical but the salient characters are well brought out and are sufficient for general recognition. Greater stress is laid on the bird's general habits and its relation, either economic or aesthetic, to man. There are final

chapters on "Books on Ornithology" and "Birds in Canadian Poetry," under which last a number of well chosen examples are given.

The whole seems admirably adapted to education in the schools and also presents pleasant and profitable reading without them. It is text-book

enough for elementary instruction but is freely and interestingly written, contains much good writing and good observation, and informs not only painlessly but pleasurably. Withal there are many bits tucked away in its lines that even an experienced ornithologist can profit by.—P.A.T.

MARCH EXCURSION

On March 25, by invitation of the Director, Dr. E. S. Archibald, the Ottawa Field-Naturalists' Club will visit the Division of Animal Husbandry at the Dominion Experimental Farm, Ottawa. Meet at the Dairy in Farm Grounds at 3 p.m. Leader—Mr. Geo. W. Muir.

Members please turn out in full force as an excellent afternoon's programme, including the inspecting of young live stock, has been arranged. Invite your friends.

F. J. Fraser
W. H. Lanceley
Conveners



Taverner, P. A. 1933. "An Introduction to Bird-Study in British Columbia, by J. A. Munro [Review]." *The Canadian field-naturalist* 47(3), 61–62.
<https://doi.org/10.5962/p.339462>.

View This Item Online: <https://www.biodiversitylibrary.org/item/89103>

DOI: <https://doi.org/10.5962/p.339462>

Permalink: <https://www.biodiversitylibrary.org/partpdf/339462>

Holding Institution

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Sponsored by

Harvard University, Museum of Comparative Zoology, Ernst Mayr Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Ottawa Field-Naturalists' Club

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.