

marck's doctrine can not possibly be plain to the reader from the author's presentation of it.

The book not only lacks evidences of seasoned thought, but of familiarity with the more recent literature bearing on the discussion of heredity, and, on the whole, is a disappointing analysis of the subject. Nevertheless, we believe it will be of service on account of the new point of view adopted and the citing of evidences bearing on heredity furnished by disease. Doubtless, this volume will assist materially in getting medical men to pay more attention to the matters discussed in it. If this be the case, the purpose of the book, as stated by the author in his preface will be justified: "I have addressed the volume mainly to medical men. The evidence relied on is drawn largely from medical sources; medical men form the largest body of scientific workers; they deal continually with questions of heredity, a knowledge of which is of great importance to them; but in a measure they have neglected the systematic study of the subject. Little or no instruction is given in it to medical students. There does not even exist a text-book to which they may refer. But a knowledge of heredity is becoming essential to the educated doctor. I have sought to supply the want. I hope, however, the professional biologist and the general reader will not find the work devoid of interest."

WILLIAM A. LOCY

Postelsia, The Year Book of the Minnesota Seaside Station, 1906. St. Paul, Minnesota. 1906. Pp. 364. Small octavo.

Four years ago the first volume of this unique publication was issued, and now we have a second volume so like the first in paper, print, illustrations and bindings that it seems a fit companion for it upon the shelves of the botanist's library. Like its predecessor, the present volume contains seven papers, with a half-page 'Word of Introduction' from Professor MacMillan, the director of the Minnesota Seaside Station. The first paper, 'Observations on Plant Distribution in Renfrew District of Vancouver Island,' by C. O. Rosendahl, occupies more than one third of the volume. In it the writer first discusses the

marine formations, then the formations of the beach, and the formations of the forest country, and follows with an annotated systematic list of the pteridophytes and spermatophytes of the region. His conclusion is "that the flora of Vancouver Island, in so far as it can be judged by observations confined to a limited area of the same, is typically boreal, with an admixture of more arctic forms than the latitude, the elevation above sea-level, and present climatic conditions would indicate." The second paper, by F. K. Butters, on 'The Conifers of Vancouver Island,' describes thirteen species as occurring spontaneously on the island, viz., *Taxus brevifolia*, a shrub or small tree; *Pinus contorta*, a small tree; *Pinus monticola*, a tree 30 meters or more in height; *Picea sitchensis*, 'tidal spruce,' attaining 60 meters in height and two meters in diameter; *Tsuga mertensiana*, 'mountain hemlock,' a tree of the alpine regions; *Tsuga heterophylla*, 'western hemlock,' a tree nearly as large as the tidal and spruce; *Pseudotsuga taxifolia*, 'Douglas fir,' a large tree of 'magnificent proportions'; *Abies grandis*, 'white fir,' a tall, slender tree; *Abies amabilis*, 'white fir,' 'a tall tree with a straight, slender trunk'; *Thuja plicata*, 'cedar,' a large tree, 'not infrequently five meters in diameter at the base'; *Cupressus nootkatensis*, 'yellow cedar,' a tree of moderate size; *Juniperus communis sibirica*, 'juniper,' a dwarf, trailing shrub; *Juniperus scopulorum*, 'western red cedar,' a small tree. The author thinks it 'probable that further exploration of the higher mountains of the interior will reveal from one to three other species of the *Abietineae*.' In the third paper, A. W. Evans makes an annotated list of 71 species of *Hepaticae* collected principally by members of the Seaside Laboratory. 'Some Western Helvellineae' is the fourth paper by D. S. Hone. It is followed by a paper by R. F. Griggs describing a new genus of kelps, *Renfrewia*, related to *Laminaria* and *Cymathere*, from the Vancouver coast near the Seaside Laboratory. But one species, *R. parvula*, has been discovered. Isabel Henkel's 'Study of Tide-pools,' and Professor C. W. Hall's 'Geological Features of the Minnesota Seaside Station' are interesting geological

papers with excellent half-tone illustrations. A full index closes this most interesting volume, which in the words of the editor "will be a souvenir to those who know the Vancouver coast and love the memories of the happy days and nights under the sheltering roof of the 'Sea Palms,' or beside the white water." To others it will certainly justify the hope that it 'will have some scientific and permanent value.'

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SOCIETIES AND ACADEMIES

THE BIOLOGICAL SOCIETY OF WASHINGTON

THE 419th meeting was held on November 3, 1906, President Knowlton in the chair and twenty-seven persons present.

Dr. Theo. N. Gill presented the first paper of the meeting, on 'The Work of *Pterophryne* and the Flying-Fishes.' The combination of two such different fishes as sargasso fish, or *Pterophryne*, and the exocœtoid flying-fishes is the index of a curious history.

In December, 1871, one of the most accomplished naturalists of the nineteenth century, Professor Louis Agassiz, made a famous voyage for discovery to Brazil and while traversing the Gulf Stream, found a globular nest-like mass of sea-weed filled with eggs, which he examined and noticed in a letter published in the *American Journal of Science*. These eggs were identified as those of the sargasso fish, now generally known as *Pterophryne histrio*. In 1887 many more such masses were found in the sargasso meadows off the coast of Africa, and, accepting the identification by Agassiz, Professor Leon Vaillant explained how the *Pterophryne* made the nest. In 1894 Professor K. Möbius described still more in detail the eggs and nest and likewise assumed the correctness of the identification of the mass as a nest made by *Pterophryne*. He described in detail and figure the bipolar filaments of the eggs found in connection with such masses and found, by examination of the ovaries of a *Pterophryne*, that the ovarian eggs had no filaments and were smaller than the eggs found in the nest-like masses. He consequently postulated that the filaments must be acquired during the passage of the eggs

through the oviduct. Such were the opinions up to last year. It was then found that the *Pterophryne* had nothing whatever to do with the nest-like masses of sargasso!

In the fall of 1905 Dr. Hugh Smith invited the speaker to call at his office and see some eggs that had been laid by a *Pterophryne* in an aquarium under his own observation. To his surprise, those eggs had no filaments and were smaller than those that had been described by Möbius. Subsequently Dr. E. W. Gudger sent him a notice of similar eggs and explained that they were extruded in a long jelly-like mass, in fact like that issuing from an angler (*Lophius piscatorius*).² It became evident, therefore, that the nest-like masses of sargasso must be made by a very different fish from the *Pterophryne*. The only eggs like those found in the sargasso weed are those of flying-fishes. In fine, the nest-like masses of sargasso are not made by any fish at all, but by the eggs themselves. The eggs must be laid on the fronds of the weed and the long motile tendril-like filaments clasp the finely cut branches of a frond till a globular mass is brought together. As Professor Agassiz had not noticed any bipolar filaments on the eggs examined by him, Dr. Gill thought it was possible that a lot of the eggs of a *Pterophryne* might have drifted in a mass with flying-fish eggs. The different times of oviposition of the sargasso-fish and the maker of the nest-like masses, it is true, were an objection to such a hypothesis, but it was assumed that there might be exceptional coincidence. To test the hypothesis, Dr. Alexander Agassiz, the discoverer of the peculiar oviposition of the angler, sent eggs taken from outside of a nest-like mass figured by him and they proved to have the filaments characteristic of flying-fishes. That hypothesis must, therefore, be abandoned, and the one crediting the formation of the nest-like masses to the flying-fish alone be accepted for the present at least.

Dr. Hugh M. Smith in discussing the subject described the spawning of *Pterophryne*

² See 'A Note on the Eggs and Egg-laying of *Pterophryne histrio*, the Gulf-weed Fish,' by E. W. Gudger, in *SCIENCE*, December 22, 1905.