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be highly organized and surprisingly "modern" in aspect, thus showing that our knowledge of the actual starting point for this now dominant group is still imperfect. Mention may be made of a few of the more interesting forms. A small *Sagittaria*-like leaf is described under the new generic name of *Alismaphyllum*. What appears to be a fruiting sedge is included under *Cyperacites*, while under the name of *Plantaginopsis* is figured a plantain-like leaf and fruit possibly belonging to the Xyridales, which completes the list of monocotyledons. The dicotyledons are included under *Populus*, *Populophyllum*, *Nelumbites* (a very *Nelumbo*-like leaf formerly referred to *Menispermites*), *Sapindopsis*—the most abundant and important dicotyledonous plant of the time—*Celastrophyllum*, a form-genus suggesting the Celastraceæ, *Sassafras*, quite closely approximating the living form, *Araliophyllum* and *Ficophyllum*, form-genera recalling *Aralia* and *Ficus* respectively, and a few others that are without very clearly understood living affinities. Altogether, the elaboration of the Lower Cretaceous floras of Maryland is of a high order, and Mr. Berry is to be congratulated on the completion and publication of the work which must long remain as a model of its class.

F. H. KNOWLTON

Woodland Idyls. By W. S. BLATCHLEY. Indianapolis, Ind., The Nature Publishing Co. 1912. Pp. 242.

Mr. Blatchley has again published a nature book, interesting, instructive, enjoyable. Just the kind of a book to take out on a summer vacation to impart the love of nature and her creatures and teach one the value of simple things. It is a chronicle of several vacations spent in the fields and woods, camping at night in a tent, by day fishing, watching birds and insects, and taking notes on the happenings around him. Mr. Blatchley is qualified to speak knowingly and scientifically of nature's secrets, by long years of investigation in various phases of zoology and botany. The specialist will find here many little notes on the habits of birds, fish, turtles, small mam-

mals and insects fresh from the mind of a careful observer. Like a clear, sweet, woodland brook, there runs through all a philosophic, yet optimistic strain of adaptation of human needs to the simplicity of nature.

N. BANKS

The Evolution of Animal Intelligence. By S. J. HOLMES. New York, Henry Holt. 1911. Pp. iii + 296. \$2.75.

Professor Holmes gives a rather popular presentation of some of the recent work in animal behavior. He does not pretend to make his treatment of the field of behavior at all complete. The subjects he treats at some length are as follows: tropisms; behavior of protozoa; instincts and their origin; pleasure, pain and the beginnings of intelligence; types of intelligence in crustaceans, mollusks, insects, lower vertebrates and mammals. The final chapter is devoted to the study of the mental life of apes and monkeys.

While most if not all of these subjects have received more skilful treatment in the hands of Jennings, Mast, Washburn, Yerkes and Thorndike, Holmes gives a readable presentation of certain phases of behavior which will be of service to students beginning the study of comparative psychology. The book's value lies in the readiness with which it lends itself to pedagogical purposes.

JOHN B. WATSON

JOHNS HOPKINS UNIVERSITY

Butterfly Hunting in Many Lands: Notes of a Field Naturalist. By GEO. B. LONGSTAFF, M.A., M.D., Oxon. Longmans, Green & Co. 1912. Pp. xviii + 724, with sixteen plates, seven colored. Price, \$7.00 net.

The author describes this work as "an attempt, possibly a foolish one, to put into a readable form the technical diaries of a wandering entomologist, and to entomologists alone it appeals." The reviewer is inclined to agree. After a chapter on early reminiscences, Dr. Longstaff devotes nearly five hundred pages to notes on his captures from 1903 to 1910, during which time he visited Canada, certain of the West Indies, Panama,

northern South America, South Africa, Algeria, Egypt and the Soudan, India and Ceylon, China, Japan, New Zealand and Australia. He very evidently collected vigorously, both by eye and by net, not confining himself to butterflies, notwithstanding the title. In fact the majority of the illustrations in this part of the book as well as many of the notes concern other insects. These notes are largely simple records of captures, leavened somewhat by random remarks concerning them or his traveling experiences. In view of the large amount of ground covered in so short a time, the lists of species for given localities are naturally too incomplete to be important and they must certainly detract from the interest of the narrative for non-entomologists.

The last chapter is based upon two papers by the same author in the *Trans. Ent. Soc. London* and is a summary of bionomic notes made chiefly by Dixey and the author on butterflies. The odor of many species is described; mutilated specimens are listed as having escaped from foes; peculiarities of flight and resting attitudes, including the selection of harmonizing backgrounds, are discussed, and the conclusions are orthodox neo-Darwinian.

The appendix consists of a translation of twelve of Fritz Müller's papers on the scent-organs of Lepidoptera. Six of these were published in Portuguese in the *Arch. do Mus. Nat. do Rio de Janeiro* where they have been inaccessible to many. The translations are by E. A. Elliott and the introduction to the appendix is by Poulton. The collection and translation of these papers will be a great help to students and it is well that they be read in connection with Longstaff's observations. However only the last chapter (and not all of that) is necessary for this purpose, and it does seem unfortunate that the rest of the book was not bound separately.

F. E. LUTZ

THE TALKING DOG

EXTENSIVE comment has been made in the German and even in the American daily press

on the reported conversational ability of "Don," a German setter seven years old, belonging to the royal gamewarden Ebers at Theerhutte in Gardelegen. Numerous observers reported that he had a vocabulary consisting of eight words, which he could speak if food were held before him and the following questions propounded: "Was heisst du?" "Don." "Was hast du?" "Hunger." "Was willst du?" "Haben haben." "Was ist das?" "Kuchen." "Was bittest du dir aus?" "Ruhe." Moreover, he was said to answer categorical questions by "Ja" and "Nein"; and in reply to another question, to speak the name, "Haberland." Among others whom popular report mentioned as witnesses to this extraordinary ability of the dog was Mr. Oskar Pfungst, of the Psychological Institute of the University of Berlin, whose important tests on the horse of Herr von Osten, "Der Kluge Hans," have lately been published in English.¹ Mr. Pfungst had in fact investigated the behavior of the dog in collaboration with Professor Vosseler and Dr. Erich Fischer, keeping detailed memoranda on the tests, and making a number of phonographic records. Partly to clear up misapprehension of his own position and partly for the enlightenment of the serious general public, he gave out a brief popular report of his work,² a summary of which appears below.

Having proposed three definitions of speech: first, properly, as the use of vocal sounds to convey to the listener an idea experienced by the speaker; secondly, more loosely, as the production of vocal sounds learned by imitation, but used without knowledge of their meaning to the hearer; and thirdly, as the production of vocal sounds not imitative of human speech, having no meaning to the speaker, but producing in the hearer illusions of definitely articulated, spoken words, uttered to convey meaning—Mr. Pfungst then asks to

¹ Pfungst, Oskar, "Clever Hans." Translated by Carl L. Bahn. New York, Henry Holt & Company, 1911.

² "Der sprechende Hund," von Oskar Pfungst (Berlin), Sechste Beilage zur Possischen Zeitung, 27 April, 1911.