

commoner species with accompanying figures of pellets, are added for the benefit of the agriculturist. The result of the stomach and pellet examinations are given in tabular form. Data consisting of the date, locality, and the kind and number of insects and animals making up the food, is given for each stomach and pellet examination. These tables answer for the owls, therefore, two questions submitted by the author in his introduction: How much food do birds consume? and: What kind of food do they take?

According to the tables, the field mouse (*Microtus arvalis*), and the Waldmaus (*Mus sylvaticus*) and the house mouse (*Mus musculus*) is the food most often taken. Shrews, sparrows, frogs, and insects, and even occasionally larger mammals such as the rabbit and weasel, were found to make up a small percentage of the food.

Evidence of the occurrence of certain small mammals abundant in Germany but seldom recorded in Hungary, was presented by the discovery of an Ackermaus (*Microtus agrestis*) in the stomach of an Uhu (*Bubo bubo*), and of the nordische Wuhlratte (*Mus ratticeps*) in the stomach of a Waldkauz (*Syrnium aluco*).

Constant reference to the results of similar investigations in Germany strengthens the evidence. The large number of pellet examinations recorded, shows the interest taken in this line of work in Germany. Of the Schleiereule (*Strix flammea*) alone, 703, 9,472, and 2,821 pellets have been examined by three different investigators.

Dr. Greschik's doctor's thesis entitled: "Beitrage zur Kenntnis der Molaren der einheimischen Murinen," published in 1910 *Aquila*, was a contribution of permanent value. The determination of seeds, insects, and animals found in the stomachs of birds is not an easy task, and the presentation of improved methods adds to the accuracy and efficiency of future workers in the field. The method of determining species of mice by means of tooth characters described by Dr. Greschik furnishes a dependable method of determining species.

We therefore recognize in Dr. Greschik's present contribution the same admirable type of work as that to be seen in his thesis. The desire to furnish "positive data" as to the food of birds is the ideal that should lead and influence every economic ornithologist. May the day be hastened when still more of this type of work will be seen in our ornithological and agricultural publications.—H. C. BRYANT.

MICHIGAN BIRD LIFE. BY WALTER BRADFORD BARROWS, S. B. [Special Bulletin of the Department of Zoology and Physiology,

Michigan Agricultural College, 1912, pp. i-xiv, 1-822, 70 pls., 152 figs. in text].

This should be an extremely useful book to anyone interested in Michigan birds—to the specialist desiring accurate, thorough information regarding the species occurring in the state, to the student endeavoring to identify birds, either alive or in the hand, or to the "average citizen" out for sport or recreation, who chances upon some interesting specimen. The treatment seems adequate to meet any of these contingencies. Descriptions are brief, but accurate, bringing out clearly the salient features of the species. The accounts of the life histories and status within the state of the various species treated, have evidently been most carefully drawn up; and in the doubtful cases, such as *Bonasa u. umbellus* and *B. u. togata*, the facts in the case are impartially submitted, while the conclusions drawn seem sound and sensible. "Keys" are used, but not to excess, and there is a sufficiency of excellent illustrations so that the person needing the "key" (and who but seldom uses it) will in many cases be able to utilize the pictures as short cuts to the information desired.

The introduction may be profitably read and studied by ornithologists of any region, the author's remarks on distribution, the changes produced by varying conditions in the state, methods of study, migration, and kindred subjects being eminently interesting and suggestive.

On the whole this account of the birds of Michigan appeals to the reviewer as a most admirable piece of work. Not the least of its merits is the fact that it has been published in such a way as to be obtainable by those who will most need and appreciate it.—H. S. SWARTH.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

AUGUST.—The August meeting of the Southern Division of the Cooper Ornithological Club was held on August 29, 1912, in the Committee Room of the Museum of History, Science and Art. Mr. F. S. Daggett was elected temporary chairman.

The following members were present: Appleton, Daggett, Law, Rich, Zahn.

The minutes of the Southern Division for July were read and approved. Upon motion of Dr. Rich, seconded by Mr. Zahn, and duly carried, the Secretary was instructed to cast the unanimous ballot of those present electing to active membership, Messrs. Samuel Hubbard, Jr., Jesse J. Wood, William A.