

he has tabulated furnish an important basis for further work on the migration of these birds.—W. S.

Biological Survey Duck Maps.—The U. S. Biological Survey has issued a series of maps showing the breeding area and region of shooting for twenty-four of the Ducks and Geese most popular with sportsmen. These are sent out to editors of various publications with the privilege of using them as copy on condition that the statements that accompany them be also published.

This is an excellent way of disseminating accurate information regarding our water-fowl and nothing will show more convincingly the decrease in the breeding areas of these birds, and the consequent decrease in the numbers of the birds themselves, than a glance at these maps. The resultant publicity, too, should make every sportsman aware of the exact situation which the Ducks face today and enlist his support of any measures that seem necessary to save them from extinction regardless of his personal inconvenience. Let us hope that the maps and accompanying statement may receive the careful attention that they deserve.—W. S.

Teaching Units of the Emergency Conservation Committee.—The Emergency Conservation Committee has recently published two excellent "Teaching Units"¹ prepared by Ellsworth D. Lumley of the Biology Department of Great Falls High School, Great Falls, Montana. One of these deals with "Hawks" and the other with "Shortage of Waterfowl" and both are designed for school use. The former presents not only reliable data on the food of Hawks taken from Fisher's 'Hawks and Owls' and other similar publications, but emphasizes the injustice of the campaign of so-called sportsmen against these birds, the wastefulness of bounties, etc., etc.

The Waterfowl 'Unit' covers the evils of draining marshes, baiting, the ethics of sport, the wasteful methods of certain gunners, the principles of game laws, etc.

The objects of the two pamphlets are tersely stated to be: I. (a) To become acquainted with our Hawks so as to be able to identify each group; (b) To learn the true value of our Hawks to the farmer and the sportsman; (c) To learn the harm done when bounties are offered for the killing of these birds. II. (a) To come to a correct solution as to why our Waterfowl have decreased so rapidly in the last 20 or 25 years; (b) To understand the true meaning of sportsmanship.

Then there are series of "assignments" for scholars to follow up with the aid of the information presented in the 'Unit' and that to be obtained from the books and articles cited in the bibliography. The intention is to stimulate class discussion and the preparation of essays on all branches of the subject. There is a brief discussion of the Crow problem at the end of

¹ Conservation Series. Teaching Units. I. The Shortage of Waterfowl; II. Hawks; both by Ellsworth D. Lumley. Price 10 cents each. Emergency Conservation Committee, 734 Lexington Ave., New York.

the Water-fowl 'Unit' and we understand that other 'Units' are to appear shortly dealing with "Eagles and Owls" and with "Fish-eating Birds."

While much has been published in the way of popular information and instruction on bird protection, the recent activities of sportsmen's organizations in the thoughtless destruction of various birds supposed to destroy "game," and the difficulty in making the public at large realize man's part in the decrease in water fowl, make it imperative that full knowledge of these topics be added to the courses in conservation conducted in our schools and the pamphlets here noticed seem to be an excellent effort in the right direction. The greatest opportunity for conservation lies in education in the schools, for the children are open minded while the sportsmen often are not, and it is the children of today who will frame the laws of tomorrow.—W. S.

Russian Economic Ornithology.—A few recently received papers illustrative of this field are herewith reviewed.

V. I. Tichvinsky¹ discusses analyses of 370 stomach contents representing nine species of Russian wild Ducks, four of which are the same as species occurring regularly in the United States. Two tabulations are presented, one of spring and the other of autumn foods. It is evident that the items are much the same as those found in studies of American wild-fowl. The pondweeds, bullrushes, bur-reeds, waterlilies and smartweeds are prominent among the vegetable, and snails, water beetles, dragonflies and caddis-flies among the animal items of food. The Gadwall, as with us, is a great consumer of green vegetation, and the Shoveller of mollusks; other species have less pronounced tastes. The text is in Russian, a summary in Esperanto.

A statement² is made about natural enemies of the ground-squirrel in which the Kite, Buzzard, Kestrel, Golden and White-tailed Eagles and Long-eared Owl are credited with preying upon the animal and eight other birds of prey not known to do so are named. Text in Russian, summary in English.

Birds of prey are also credited³ with causing a rapid decrease in severity of an outbreak of the Steppe Lemmer. The birds most prominently mentioned are *Milvus koshun*, *Circus macrurus*, and *Asio accipitrinus*.

A paper by Jarkoff and Teploff⁴ is based on nest studies, includes analysis of remains of prey about the nest, disgorged food, and the contents of stomachs, during the years 1924 to 1930. The interesting statement is

¹ The Food of Aquatic Game Birds. By V. I. Tichvinsky. Records Volga-Kama Biologic-Trade Station, 1a, 1931. Pp. 169-202.

² The Biology of the Reddish Ground-squirrel (*Citellus rufescens* Keys. et Blas). By V. I. Tichvinsky. Records Volga-Kama Biologic-Trade Station, 2, 1932. Pp. 46-89, 19 figs.

³ On the biology of the Steppe Lemmer (*Lagurus lagurus* Pall.) and experiments for its control. By N. M. Sewenov. Journ. Agr. Sci. of southeastern U. S. S. R., 8(2), 1930. P. 394.

⁴ Materials on the Food of the Birds of Prey. By J. V. Jarkoff and V. P. Teploff. Records Volga-Kama Biologic-Trade Station, 2, 1932. Pp. 138-201, 17 figs.