

spicuous outbreak of some insect pest was at once met by the activity of birds which naturally take advantage of a sudden abundance of satisfactory food. In 109 cases the birds soon had the insect outbreak under control and in 88 cases local suppression of the insect was accomplished. The reviewer has noted several cases similar to those cited. At Solon Springs, Wis., in June, 1926, there was a great swarming of Mayflies that attracted birds of several species which simply gorged themselves for a few days destroying a large proportion of the flies. Then when the flight was over they disappeared. Again at Cape May, N. J., in August, 1925, an attack of the Catalpa caterpillar threatened to defoliate these trees but the sudden appearance of Black-billed Cuckoos practically exterminated them in a few days.

The importance of the *presence* of a "bird army" ready to cope with any sudden insect emergency is well emphasized in such cases, and should be borne in mind when destruction of bird haunts is imminent. As particularly apropos of the present time, when thoughtless and ignorant persons are advocating the extermination of the Crow, Mr. McAtee cites a number of instances of Crows practically exterminating white grubs, following the farmer's plow and picking up 90 per cent of all that it turned up.—W. S.

Bird Protection and Conservation Notes.—The Illinois Audubon Society has issued another of its 'Audubon Bulletins,' No. 17. It contains among other items an account, of the proof by bird banding data that the Mourning Dove is a migratory bird thus securing for it the protection of the Migratory Bird Treaty. The Ridgway Memorial Fund is discussed with illustrations of Larchmound. There are other beautiful illustrations and the publication lives up to the high standard of its predecessors.

The Australian Museum, College St., Sydney, N. S. W. is issuing a series of educational postal cards each depicting a species of Australian bird in colors, the artist's work being very well done. Six sets of five cards each are available at one shilling per set with an explanatory leaflet.

Hans Freiherr von Berlepsch has issued a pamphlet covering his 18th year of bird study and bird protection.

Archibald Rutledge has a timely warning to farmers to leave some uncleared brush land as shelter for the birds since they will leave a farm that is too clean and the farmer then loses their valuable services. The paper appeared in the 'Saturday Evening Post' for July 31, 1926, and has been reprinted in 'California Fish and Game' for October.

In the latter journal H. C. Bryant discusses the destruction of Western Mourning Doves in California where Dove hunting is still legal.—W. S.

The Food of Some British Wild Birds.¹—Dr. Walter E. Collinge has in this revision of his 1913 book of the same title completed a monumental

¹ Published by the Author, The Museum, York, England, in 9 parts, 1924-1927, Price 50 shillings.

personal achievement. He assembled and examined some 10,000 stomachs of birds besides large numbers of pellets, incorporated field notes and other findings from over 20 years of study, and has personally published the results to the extent of more than 400 royal octavo pages, with eight plates, forty graphic diagrams and numerous tabulations. Such a piece of work has not been accomplished elsewhere without state support, and our gratitude for his self sacrificing efforts as well as praise for the quality and magnitude of his work must be tendered Dr. Collinge.

The introduction notes previous accounts of the economics of British bird life and sketches the main problems of economic ornithology and the general make-up of the British avifauna. Of a total of about 380 species recorded for the British Isles, only about 75 species are common, and come in close enough contact with man, to require treatment in the work. Considerable attention is given to methods used in economic ornithology both as to their history and technique and Dr. Collinge supplements arguments made by others in advocating the volumetric system as the only satisfactory one for use in the study of food habits.

In a chapter on The Food and Feeding Habits of Nestling Birds, Dr. Collinge indicates that British birds agree with the majority of those studied in other countries in giving a very high proportion of animal food to their young. Experiments performed by Dr. Collinge on the rate of digestion by adult birds indicate complete digestion of all classes of food in $3\frac{1}{2}$ to 4 hours, results agreeing with those obtained by other investigators. The systematic account of the food of 70 species extends from page 50 to 299. From this we learn that the House Sparrow is far too plentiful and except in from the nesting season does more harm than good that the Starling has become a plague in the land and a source of great national loss, but that the Pheasant is a most valuable bird and its relation to agriculture directly beneficial. These are noted here as species introduced to the United States where their economic status may or may not work our parallel to what it is in the country from which they were derived.

The food of seabirds is given special consideration in two chapters and the conclusion reached that "no action of man or of wild birds can produce any appreciable effect upon the plenitude of fishes of the sea" and that there is no excuse for the slaughter of sea birds as fish destroyers.

The book concludes with chapters on Birds in Relation to Forestry, Birds as Destroyers and Distributors of Weed Seeds, Wild Birds and Legislation, Protective measures, Summary and Conclusions, and a Bibliography of more than 660 titles.

American writings on economic ornithology have been given much consideration in the preparation of this work and are frequently quoted. One of the Plates is a portrait of Professor F. E. L. Beal to whom the work is dedicated in the following words:

"To the memory of Professor F. E. L. Beal, the most brilliant economic ornithologist of his day, whose writings have been an incentive and a

source of inspiration to all who have followed him, This Work is gratefully and respectfully inscribed by The Author."

Another portrait in the work is one of the author and it is most welcome.—W. L. M.

Birds as Distributors of Barberry.—The common barberry (*Berberis vulgaris*) has come into unfavorable notice in recent years as the most important intermediate host of the black stem rust of wheat and other grasses. A campaign for eradicating the plant is described in a recent bulletin¹ of the United States Department of Agriculture in which information is given as to the distribution of barberry seeds by birds, both in text and illustrations. The statement is made that "birds and cattle are the chief natural means of distributing escaped barberries in the United States, the birds serving to distribute the seed over an extensive area, and the cattle intensively over more limited areas" (p. 4). No proposals are made for aggressive action against birds.—W. L. M.

Economic Ornithology in Recent Entomological Publications.—Interesting information on the bird enemies of various insect pests in articles that have appeared recently is cited below, in one case with reference to additional data from other sources.

Grasshoppers.—An outbreak of grasshoppers, the most extensive since the invasion of the Rocky Mountain locust in 1874, occurred on the Canadian prairies in 1919-1923. Norman Criddle, both entomologist and ornithologist, has written several papers on the subject, of which one in the 'Fifty-fifth Annual Report of the Entomological Society of Ontario' (1924 [1925] pp. 13-16) contains interesting references to bird enemies of the pests. "Gulls," states this author, "proved an important local factor in preventing and controlling grasshopper outbreaks and their value within an area of twenty miles of their breeding places can hardly be overestimated. The most important species in Manitoba was Franklin's Gull.

"Crows could always be counted upon to frequent grasshopper infested fields and several incipient outbreaks were checked by these birds. They also learn to locate the *Camnula* egg beds, among which they did valuable service. Many birds feed regularly upon grasshoppers, and some, such as the Sharp-tailed Grouse, depend very largely upon them as food for their young. These species are all useful in maintaining a balance, but it is to those birds that gather in flocks that we owe most when grasshoppers have got beyond their normal numbers." (p. 15.)

Pale Western Cutworm (*Porosagrotis orthogonia*).—This pest which sometimes destroys thousands of acres of grain in the western United States and Canadian Provinces has bird enemies which are briefly mentioned in a pamphlet² of the Dominion of Canada Department of Agri-

¹ No. 1451, Dec. 1926, 44 pp., 13 pls.

² No. 71, June, 1926, p. 5.