

warrant the conclusion that such is solely or mainly their effect in all cases."

In the discussion of white markings that follows these general remarks, the conspicuousness and directive function of white markings that are concealed except in flight is insisted upon. The revealing function of white wing and tail markings "during flight is entirely in harmony with their concealing function when at rest." In Thayer's discussion of the "disruptive effects of color patterns," the author states that the "evidence here offered of their value as *revealing characters*, must not be regarded as contradicting anything but the application of the 'concealing' principle to birds in flight."

The following may be taken as the author's general summing of the evidence regarding coloration and environment: "With a preference for close, leafy coverts and secluded forest ways go the somberer tones, the monochrome coloration, shy, furtive habits. With a preference for open woods and roving ways, greater distances and separations to be adjusted, have come the greatest variety of top-patterns among birds, many of them showing excellent devices for a revealing flight from the opening wing." As a whole the paper is a welcome contribution of fact and discussion to a very interesting subject.— J. A. A.

Grinnell's 'American Game-Bird Shooting.' — Grinnell's 'American Game-Bird Shooting'¹ comprises three parts, treating respectively of 'American Game Birds,' in which the species and their habits are described (pp. 1-301); 'Upland Shooting' (pp. 303-507); and 'The Shooting of the Future' (pp. 511-558). The first part is ornithological, treating at length and in a very comprehensive manner of the habits and distribution of the Woodcock and Snipe, and the various species of Quail and Grouse of North America. For the purposes of the present book the author has "considered as game birds only the species that are commonly hunted with dogs," and it thus includes only those above indicated. The second part relates to the various methods employed in taking the birds, and such aids to shooting as dogs, guns, and ammunition. The third part comprises 'A Look Backward,' in which is historically set forth the great decline in the original abundance of game birds in this country and the causes that have produced it, and an account of the introduction of exotic game birds to replenish the havoc wrought through excessive destruction of native game birds. There is also an account of the efforts that have been made to restock exhausted covers and a plea for greater self-control on the part of gunners as an aid in promoting good shooting in the future.

Dr. Grinnell writes with the authority of one thoroughly master of his subject, and his 'American Game-Bird Shooting' may well interest a

¹ American Game-Bird Shooting. By George Bird Grinnell. With colored plates of Ruffed Grouse and Bobwhite, 48 full-page portraits of Game Birds and Shooting Scenes, and many text cuts. New York: Forest and Stream Publishing Company. [Copyright, 1910.] 8vo, pp. xviii + 558. \$2.50 net; postage, 25 cents.

much wider circle than those who pursue birds with dogs and guns.—
J. A. A.

Report of the Chief of the Bureau of Biological Survey for 1910.¹—

The report of the Chief of the Biological Survey, Mr. H. W. Henshaw, on the work of the Survey contains the usual summary of its activities for the fiscal year ended June 30, 1910. As is well known to readers of 'The Auk,' the resignation of Dr. C. Hart Merriam, for so many years the efficient director of this important Bureau, became effective June 1, 1910, and the Assistant Chief, Mr. H. W. Henshaw was promoted to the vacancy, with Dr. T. S. Palmer as Assistant Chief, Dr. Merriam still retaining an official connection with the Survey under the title of Consulting Biologist. The present report therefore deals mainly with the period preceding the change in administration.

In a document so condensed, and dealing with so many subjects of general interest, reference can here be made only to those more especially relating to ornithology. Investigations of the economic relations of birds and mammals to agriculture, of the geographic distribution of animals and plants with reference to the determination of the life and crop belts of the country, the supervision of matters relating to game preservation and protection, and the importation of foreign birds and animals, are the prescribed functions of the Survey under acts of Congress. Field work was conducted during the year in twelve different States, in continuation of that of previous years. The biological survey of Colorado and New Mexico is now practically completed and the final reports thereon are nearly ready for publication. It is stated that satisfactory progress has been made in digesting and putting into shape for easy reference the accumulated mass of information on mammals and birds, including a great amount of data on the migration and distribution of North American birds. Rapid advance has also been made in mapping the distribution of both birds and mammals. A revised edition of a general zone map of the United States is also in preparation.

Under the head of National Bird Reservations, which number 51, divided into six districts, it is said: "Experiments in marking birds with bands to determine the course of migration were initiated on the Stump Lake (N. Dak.) and Klamath Lake (Oreg.) reservations, and investigations to determine the homing instinct and the power of birds to find their way back to the breeding grounds, begun by Prof. J. B. Watson in 1907 on the Tortugas (Fla.) reservation, under the direction of the Carnegie Institution, were continued in the spring of 1910."

Game protection, illegal traffic in game, coöperation in game protection with State authorities, the supervision of the importation of foreign birds and animals, investigation of the food habits of ducks, the relation of birds

¹ Reprinted from Annual Reports of the Department of Agriculture, 1910. Svo, pp. 19. Washington, Government Printing Office, 1910.