

than with the Cranes, although it represents a family distinct from the Rallidæ. This conclusion illustrates how difficult it is to arrive at any generally acceptable classification of birds, so great do the opinions of individuals differ. Dr. P. Chalmers Mitchell in a recent investigation of this same problem on the basis of osteology comes to a diametrically opposite opinion! (Abst. Proc. Zool. Soc. London, May 25, 1915). The Stone Plover Dr. Shufeldt finds to be probably not closely allied to the Bustards as has sometimes been claimed. On the other hand it shows clearly the relationship between the *Limicola* and the *Longipennis*, and "so far as osteology goes, beautifully bridges across one of the gaps, for we find both pluvialine and larine characters intimately blended all through the skeleton." Dr. Mitchell's views upon this point would be interesting for comparison.—W. S.

**Recent Publications of the Biological Survey.**—Prof. Cooke<sup>1</sup> in a report on the shorebirds points out their value as game and the importance of preserving them from extinction. The Wilson's Snipe, Woodcock, Upland Plover and Eskimo Curlew are the species especially considered and their former abundance and rapid decrease in numbers are reviewed and the causes pointed out. As an illustration of the unchecked slaughter of these birds in the southern States the record of a gunner in Louisiana is cited, who in 20 years from 1867 to 1887 killed 69,087 Wilson's Snipe!

Mr. Alex. Wetmore<sup>2</sup> has been making a field study of the mortality of ducks, shorebirds, herons, etc., in the neighborhood of Great Salt Lake where large numbers of these birds have died under apparently similar conditions to those which attended like mortality at Tulare and Owens Lakes, California.

The cause of the trouble has not been positively determined but seems in all probability to be alkaline poisoning from the water. The increase in irrigation it is suggested has taken up vast quantities of alkali from the soil and in dry seasons the water naturally becomes heavily charged with it. Investigations by experts fail to show that bacteria, nematodes or poison from smelting works have had serious effect upon the birds.

Another valuable paper recently issued is a new edition of Mr. McAtee's 'Important Wild-Duck Foods,'<sup>3</sup> which is in great demand among breeders of wild fowl.—W. S.

**Da Costa on the Economic Value of the Birds of São Paulo, Brazil.**<sup>4</sup>

<sup>1</sup> Our Shorebirds and their Future. By Wells W. Cooke. Yearbook U. S. Department of Agriculture for 1914, pp. 275-294.

<sup>2</sup> Mortality Among Waterfowl around Great Salt Lake, Utah. (Preliminary Report.) By Alex. Wetmore. Bull. 217 U. S. Department of Agriculture. May 26, 1915.

<sup>3</sup> Eleven Important Wild-Duck Foods. By W. L. McAtee. Bull. 205 U. S. Department of Agriculture, May 20, 1915.

<sup>4</sup> Os Pequenos Amigos da Agricultura. Por. J. Wilson Da Costa. Published with the aid of the Secretary of Agriculture of São Paulo, 1914, pp. 1-118, illustrated.

As a pioneer publication on economic ornithology for Brazil, this brochure is worthy of attention by those interested in the value of birds in their relation to agriculture. Chapters are devoted to the dangers attendant on extensive deforestation, the function of certain useful birds and animals, the breeding of wild forms in captivity, birds that are useful, animals friendly to agriculture, the usefulness of hummingbirds and bees, predacious insects, and the economic services of domesticated birds.

Grave dangers are foreseen in the extensive destruction of forests in many areas, not only to the native fauna but to climatic conditions in general. After a few notes on the value of certain mammals the author takes up the question of the birds useful to agriculture, sketching briefly the services of the various orders and families and giving an account of a few common species in each group. Attracting birds about fields and houses is recommended by the placing of pans of water and boxes containing grain and seeds.

The Black Vulture is said to do harm in carrying germs of various epizootics, on the authority of Dr. H. von Ihering. The other two vultures found (*Cathartes aura* and *C. urubitinga*) are apparently not included in this statement. They have been seen destroying snakes. More than sixty species of woodpeckers are found in Brazil. The author remarks that they constitute a "comissão sanitaria phitophathologica" for the forest trees. Attention is drawn to the destruction of injurious ants by *Colaptes campestris*. The Anis are said to destroy many cattle ticks (a belief not yet substantiated in stomach examinations in the Biological Survey). They feed on other insects and lizards as well. The Guira Cuckoo (known locally as *Almo de gato*) also lives on insects. The illustrations are in the main from photographs of mounted birds. The drawing (p. 35) labelled Ani is apparently some species of *Molothrus*.

In an appendix (pp. 106-118) is a short account of the wild pigeons of Brazil. It includes a discussion of their habits, nidification, food and range.

Though we may hesitate in endorsing fully some of the statements made in regard to the food of certain species, the author is to be commended for his efforts in behalf of the birds native to his country. Our knowledge of economic conditions in regard to Tropical American species is slight and it is hoped that the present contribution is the forerunner of more detailed investigations — A. W.

**Third Report on Food of Birds in Scotland.** — The report upon investigations of the food of birds in Scotland in 1913-1914, by Miss Laura Florence, has been published.<sup>1</sup> It catalogs the stomach contents of 891 birds, the total number now examined being 2897. As usual the report is made up of detailed analyses of individual stomachs, with brief summaries for each species. No general conclusions are drawn. Miss Florence is now at Stanford University preparing herself for a career in Economic

<sup>1</sup> Trans. Highland and Agr. Soc. Scotland. Fifth series, Vol. 27, 1915, pp. 1-53.