

secured specimens of 137 species of birds of which 21 had not previously been recorded from that country.

The present report¹ is based primarily upon this collection and the observations of the party but the author has wisely made it a complete list of Liberian birds including all species that had been recorded by previous writers. Following the name and reference to place of publication there "comes a very brief description designed to help in the identification of specimens, particularly for anyone slightly familiar with birds who may live in Liberia; the range in Africa follows and then a summary of what has been published on the habits and occurrence of the species in Liberia, together with our own notes where these seemed sufficiently important." From this it will be seen that the report which covers 281 species is far more than a list and will prove most valuable as a work of reference. The author, moreover, has carried out his plan with excellent judgement and writes with his usual clarity and facility of expression. There are preliminary chapters on Ecology, River Birds, the Forest, Alterations of the Forested Areas, Migrants from Europe, and Local Migrations.—W. S.

Burt on 'Adaptive Modifications in the Woodpeckers.'—This detailed study² of the skeleton and musculature of all of the genera of North American Woodpeckers with the exception of the Ivorybill (*Campephilus*) presents a large amount of interesting data which when summarized shows that the most obvious adaptive modifications are in the skull, with a positive correlation between its structure and the habits of the birds. Arboreal habits are correlated with a wider cranium, wider straighter bill, with a folding under of the frontals along their line of contact with the premaxillae, and in general a stronger built skull than is found in the less arboreal types. As to muscles the family may be divided into two sections as to the presence or absence of the accessory semitendinosus muscle.

The author regards the Flicker (*Colaptes*) as the most generalized type of Woodpecker and the Three-toed Woodpecker as the most specialized which would involve the theory that Woodpeckers were originally terrestrial and that the arboreal habit is a later specialization, a conclusion with which we think most students of the group will agree. Mr. Burt has made a valuable contribution to bird phylogeny and anatomy.—W. S.

Gross on Wisconsin Prairie Chickens.—The investigation reported upon in the present publication³ was undertaken for the Research Bureau of

¹ The Birds of Liberia. By Glover M. Allen. Reprinted from the Report of the Harvard-African Expedition upon the African Republic of Liberia and the Belgian Congo. pp. 636-748.

² Adaptive Modifications in the Woodpeckers. By William Henry Burt, Univ. of Calif. Publ. in Zool., Vol. 32, No. 8, pp. 455-524. December 10, 1930.

³ Progress Report of the Wisconsin Prairie Chicken Investigation. By Alfred O. Gross, Ph.D., Special Investigator for the Research Bureau of the Wisconsin Conservation Commission. Madison, Wisconsin. 1930. Pp. 1-112, numerous illustrations.