

sequence. "The total number of species and subspecies contained in the catalog is 383, of which 162 are breeders. Species not actually taken within the limits of the state are distinguished by being put in brackets. Of this kind there are 30, which subtracted from 383 leave as the present status (July 8, 1907) 353 actually observed species and subspecies for our state."

The manner of occurrence and seasons of migration are stated with fulness, and authorities are cited for the records of the rarer species; the data respecting the former abundance and the extirpation of the Wild Pigeon and Carolina Paroquet are very fully given, as are the notes respecting the great decline in numbers of many other species. Taken as a whole, Mr. Widmann's 'Catalog' as an excellent summary of the ornithology of Missouri, for which his fellow ornithologists may well feel deeply grateful.—J. A. A.

Jones on 'The Development of Nestling Feathers.'¹ — "The purpose of this paper," says the author "is to give a more complete account of the development of the down, or Neossoptile, than has been given by previous writers and to show the true relation of this structure to the first definitive feather." This relation is thus stated: "The first down and its succeeding definitive feather are produced by one continuous growth, and therefore cannot be regarded as two distinct feathers. The first down is the plumulaceous tip of the first definitive feather." Contrary to the conclusion of some previous writers, the neossoptile is shown not to possess a shaft nor a true quill, but to be always in direct continuity with the barb-vanes of the first definitive feather. In other words, the neossoptile is only a more or less differentiated distal part of the first teleoptile.

These investigations are based on the study of a large number of species, representing many families, and relate to (1) the development of the nestling down (plates i-iv, and (2) the relation of the down to the first definitive feather (plates v-viii). The first definitive feather with down attached is shown in figures 56-138 (plates v-viii) from a large number of species "by direct prints from the feathers." The paper is thus one of much interest and an important contribution to the subject under investigation.—J. A. A.

Beebe on Geographic Variation in Birds.² — This paper consists of six Parts — (1) Historical; (2) Dichromatism; (3) Sporadic Melanism; (4) Experimental (*Hylocichla* and *Zonotrichia*); (5) Experimental (*Scardafella*).

¹ The Development of Nestling Feathers. By Lynds Jones. Laboratory Bulletin No. 13, Oberlin College, Oberlin, Ohio, 1907. Pp. 1-18, pl. i-viii.

² Geographic Variation in Birds with especial reference to the Effects of Humidity. By C. William Beebe, Curator of Birds, New York Zoological Society.—*Zoologica: Scientific Contributions of the New York Zoological Society*, Vol. I, No. 1, Sept. 25, 1907. Pp. 1-41, with 5 half-tone plates.