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, pll. 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.

Part I gives a general statement of the conclusions of various authors respecting the influence of climatic conditions upon the coloration of animals, and the results of certain experiments upon a genus of coleopterous insects (*Leptinotarsa*) by Prof. W. L. Tower. Part II recounts certain well known instances of melanism in wild birds and mammals, and other dichromatic phases among birds. Part III enumerates numerous cases of sporadic melanism among cage birds. Parts IV and V deal with Mr. Beebe's own experiments with Wood Thrushes, White-throated Sparrows and Inca Doves.

Mr. Beebe's experiments consisted in confining a specimen of the Wood Thrush, and of the White-throated Sparrow, and several specimens of the Inca Dove, in a superhumid atmosphere and noting the results. The food given these birds was the same as that upon which other specimens of these species were fed, so that this factor is eliminated as a possible cause of the changes observed in coloration. The Wood Thrush showed very little change at the first moult after confinement, but markedly increased change with the second moult, soon after which it died. With the second moult the black spots tipping the feathers of the under parts became much enlarged, with other minor changes in other parts of the plumage.

The White-throated Sparrow, confined under similar conditions, became, after two moults, strongly melanistic, the change affecting nearly all parts of the plumage. The Inca Doves, several of which were subjected to the same conditions, and for longer periods, showed not only a general darkening of the plumage but various other suggestive modifications. In the case of the doves, as in the other birds, there was "a radical change in the pigmentation of the plumage .... with each succeeding annual moult." *In no instance, however, was there a change of color without moult.*

In the case of the Inca Doves: "When the concentration of the melanin has reached a certain stage, a change in color occurs, from dull dark brown or black to a brilliant iridescent bronze or green. This iridescence reaches its highest development on the wing coverts and inner secondaries, where, in many genera of tropical and subtropical doves, iridescence most often occurs."

In discussing the significance of these changes Mr. Beebe finds reasons for differing from some of the conclusions reached by Prof. C. O. Whitman from the study of various species of doves and pigeons kept in confinement for investigation, under, however, normal atmospheric conditions. In respect to the Inca Doves, says Mr. Beebe: "The increase of pigment in a single individual under humidity during a comparatively short period of time, and the subsequent correlated development of metallic tints, assume a new importance when we consider that, in these experiments at least, mutation and natural selection have no place."

Professor Whitman assumes that "the direction of evolution can never

be reversed," on the basis of his experiments with domestic pigeons. Mr. Beebe found that in placing his Inca Doves (*Scardafella inca*) in an artificially produced tropical atmospheric environment, the same individual passed through, by successive moults, several color phases closely resembling tropical forms of the genus *Scardafella*. Assuming, as it is safe to do, that the genus *Scardafella* is of tropical origin, the characters thus acquired are seemingly atavistic, and that "this humidity induced variation is neither fortuitous nor directionless." These interesting and significant results open up, says the author, "innumerable new vistas of unexplored fields," which we trust he will be able to unfold to us through further experiments with these and other species.

The bearing of all this upon natural selection and ontogenetic species is discussed at some length. Respecting the latter, he considers it would be unreasonable to discard, as has been proposed, species and subspecies "which are ontogenetically interchangeable under experimentation or in a new environment," should such be found. This valuable and suggestive paper closes with a bibliography of the works referred to or directly bearing on the general subject, which we would hold up as an example of 'how not to do it'; not in personal criticism of Mr. Beebe, but of a method all too common in this day of bibliographies, where a thesis or a memoir is counted incomplete unless the author supplies a list of the papers known to him as bearing upon the subject in hand. In many, many instances we find an author cited, so to speak, in general terms,— so vaguely that one is merely guided to the volume, or to the number of a periodical, if he wishes to consult the paper or passage cited, and must hunt out for himself, as best he can, its exact place, at the loss of more or less time and the cost of more or less needless vexation at the author who through slovenliness or indolence is the cause of his trouble.

To cite, in illustration, Mr. Beebe's present attempt at a bibliography:

"FAXON, WALTER. 1886. Another Black Robin. The Auk, vol. iii."

"GÜNTHER, A. 1886. Note on the Melanotic Variety of the South African Leopard. Proc. Zool. Soc. Lond., 1886."

"HUMBOLDT, ALEXANDER VON. 1808. Ansichten der Natur."

"OGILVIE-GRANT, W. R. 1897. A Hand-book to the Game-birds. Vol. ii."

And so on, *ad infinitum*, in this and numberless other modern bibliographies. If a work or paper is worth citing, it should be cited so that the pertinent passages can be found without exasperating loss of time. If one is curious to know what Humboldt had to say in relation to humidity and coloration, or whatever it is that may be referred to, where, under such guidance, are we to find it in a work consisting of several volumes? Or if we wish to know about Mr. Faxon's black robin, or Dr. Günther black variety of the leopard, why should we be compelled to hunt in the indexes under either the name of the author or the animal, or both, to find the information wanted, when the compiler of the bibliography could have given us the page reference with no additional trouble to himself?

Besides, all this has a bad look, prejudicial to the author, who is thus open to the suspicion of lacking literary experience or of being careless and slipshod in his work, either of which suspicions may do him injustice. If an author adds a bibliography to his paper, it is presumably to place his sources of information at the service of others, and not for the purpose of tantalizing or annoying subsequent investigators. The least one has a right to expect is a full and correct citation, giving both the opening and closing pages, if exceeding a page of two in length; while a line or two of pertinent annotation, where required to make clear the bearing of the paper cited, is a boon future investigators along the same lines will recognize with gratitude.

In closing we wish to say again, that Mr. Beebe's present paper is not the cause, but merely the occasion, for this bit of criticism of indolent or slovenly bibliographers, whose number is unfortunately *legion*.— J. A. A.

Braislin's Birds of Long Island, New York.[1] — Probably no portion of North America of similar area has been the scene of more careful field work in ornithology than Long Island, New York, — a strip of land about 120 miles long by 8 to 18 in breadth, mostly low and little diversified, rarely rising into hills of a 100 feet in altitude along its northern shore. It is separated from the main land on the north by Long Island Sound, and is exposed on its southern front to the broad Atlantic. From the days of Giraud and the elder Lawrence, it has been the favorite resort, not only of gunners in quest of its abundant water-fowl, but of ornithological observers and collectors. A list of some 250 titles appended to Dr. Braislin's paper attests the harvest reaped from this fertile field, exploited so energetically by William Dutcher from 1879 to 1904, and by the author of the present paper during the last decade, and by Dwight, Foster, Chapman, Helm, Howell, the Lawrences, and others at different periods. Dr. Braislin has done well to gather these scattered records into one condensed and consistent whole, citing the dates and authorities for the rarer species, and giving concise statements of the manner of occurrence of the more common ones. The total number of species now recorded is 364; including three introduced species, and various waifs and strays from remote regions, including several from Europe. The list has been most carefully prepared, and its completeness is beyond question. The bibliography is exceptionally well done, the titles and references being fully given, and its value further increased by brief annotations to many of the titles.— J. A. A.

Finley's 'American Birds.'[2] — Notwithstanding its broad title, Mr.

[1] A List of the Birds of Long Island, New York. By William C. Braislin. Abstr. Proc. Linnæan Society of New York, for the year ending March, 1907, pp. 31–123. Also separate.

[2] American Birds | studied and photographed | from Life | By | William Lovell Finley | Illustrated from photographs by | Herman T. Bohlman | and the Author | Charles Scribner's Sons | New York 1907 — 8vo, pp. xvi + 256. October, 1907.