

in the subject. Moot questions are discussed with commendable conservatism, and the book is thus a safe guide to the inexperienced searcher for knowledge.

The author's opportunities for the study of a wide range of bird types in life, through his curatorship of birds at the New York Zoological Park, have given him advantages that few can share, and the pages of 'The Bird' are enriched by many original and hitherto unpublished observations. We note very few slips of any importance, and are therefore surprised to find it stated (p. 297) that the male Bobolink "changes from the buffy female dress to his rich black-and-white spring suit" merely by the wearing off of the brittle feather tips. The context does not lead one to suppose that the male Bobolink acquires his nuptial dress by a full spring moult, which no one better than the author of this book must know occurs, but which for the moment he forgot to imply. There is, as he states, a speedy wearing off of the brown feather-tips *after the spring moult*, beneath which the black is at first more or less veiled.

His accounts of protective coloration and geographical variation, while brief, give a good general statement of the facts, and, as is the case in nearly every instance where broad subjects, open to speculative explanation are touched upon, these topics are treated with commendable reserve. On the whole 'The Bird' fills a peculiar niche of its own, and must prove a mine of welcome information to a wide class of readers.— J. A. A.

**Hellmayr on Spix's Types of Brazilian Birds.**<sup>1</sup>—In the year 1817 the King of Bavaria, Maximilian Joseph I, sent a scientific expedition to explore the rich fauna and flora of Brazil. Dr. J. B. von Spix was the zoölogist and Dr. C. P. von Martius was the botanist of this expedition, one of the most famous and successful of the several scientific expeditions sent out by different European governments during the first half of the nineteenth century for the exploration of the natural history of South America. Spix and Martius reached Rio de Janeiro the 14th of July, 1817, and sailed from Para on their return to Europe on the 14th of June, 1820. During these three years they explored a large part of southern Brazil, and the Amazon from its mouth to eastern Ecuador, including journeys up some of its principal tributaries, as the Rio Negro and the Rio Madeira. The ornithological results, by Spix,<sup>2</sup> were published in two large quarto volumes, the first in 1824, the second in 1825, under the title 'Avium Species Novæ, quas in itinere per Brasiliam annis 1817-1820,' etc. In this work, according to Hellmayr, about 220 species of birds were described as new or given new names. Of these only about 100 remain in good standing, while a few, through the loss of the types, are not clearly determinable.

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<sup>1</sup> Revision der Spix'schen Typen brasilianische Vögel. Von C. E. Hellmayr. Abhandl. der K. B. Akademie der Wissenschaften, II Kl., XXII Bd., III Abt., pp. 563-726, Taf. 1, 2, May 20, 1906.

<sup>2</sup> Johan Baptist von Spix, born 9 Feb., 1781; died 15 May, 1826.

Spix and Martius were the first explorers to bring to European museums any considerable number of specimens from the Amazon region and the northeastern States of Brazil; in southeastern Brazil they were preceded by Prince Wied, and Spix's names for many supposed new species were forestalled by those of other authors. Spix also designated many other species by new names which had been previously described, through his inattention to the literature of the subject.

In his introductory remarks Hellmayr directs attention to the fact that the plates (hand-colored) in Spix's work differ greatly in the coloring in different copies — a fault sadly not limited to the Spix bird plates!

The Spix-Martius expedition specimens of birds were mounted, according to the custom of that time, and thus have suffered for some seventy years from the fading influence of light, while some have become moth-eaten; the original labels have in many cases been lost, but fortunately the specimens proved in most such cases to be identifiable by the catalogue records. The Spix specimens have now, except in the case of some of the larger species, been unmounted, carefully labeled, and merged with the skin collection of the Munich Museum. It is to be regretted that Spix failed to record, either in his 'Avium Species Novæ' or on his labels, the exact locality where his specimens were taken, the records, in many cases simply giving 'Brasilia' as the place of capture.

The revision of the Spix material, our author states, occupied him the greater part of two years, and in its identification he did not limit himself to the resources of the Munich Museum but made direct comparison with the necessary specimens in various other European museums, especially with those in the rich collection of Count Berlepsch, to whom he makes acknowledgment for valued assistance in his work. Thus the 'Revision' has been made with exceptional care. Although entitled a 'Revision of Spix's Types of Brazilian Birds,' it is much more than this, as it includes not only the actual types of Spix's new species, but all of the known extant specimens of birds of the Spix-Martius Expedition; and not only this, it includes incidentally the revision of many obscure groups of South American birds, and much critical comment on questions of nomenclature and synonymy, which must prove of advantage to future workers in the same field. Incidentally, also, quite a number of species and subspecies are characterized as new or receive new names. The memoir closes with a valuable concordance, showing the proper modern equivalents of all of the birds included in Spix's work, as interpreted by Dr. Hellmayr.—  
J. A. A.

**Thayer and Bangs on Sonoran Birds.**— This is mainly a nominal list<sup>1</sup> of the breeding birds of the Sierra de Antonez, in north central Sonora — a region previously little known. The principal localities are Opodepe, at

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<sup>1</sup> Breeding Birds of the Sierra de Antonez, North Central Sonora. By John E. Thayer and Outram Bangs. Proc. Biol. Soc. of Washington, Vol. XIX, pp. 17-22, Feb. 26, 1906.