

It seemed quite a coincidence that he should pass this query on to me just when I was suffering for similar information, but it confirmed my observation. Since it is well known that pellets of indigestible things are frequently thrown up by some young birds, the best that I could suggest was that this might be these same things, which, in regurgitation, had taken on the form of the usual dejections; but not being able to see any of these pellicles after they were dropped, I, of course, could not be sure. Cannot Mr. Herrick, or some close student of the habits of birds tell us something of *this*?

I had hoped to observe further before mentioning this, but my opportunities are very limited: so I concluded that I had better note it in the July 'Auk,' so that the host of nest watchers this season may, if they please, be on the lookout for the matter. So far this year I have seen nothing of the sort in casually watching two nests of Robins in my yard.

By the way, the male Oriole noted sometimes regurgitated food to the young, but the mother always came with a particle showing in her mouth. Mr. Herrick's observation that the parent ate the dejected pellicle was new and interesting to me; for, on the contrary, I have seen the Cardinal and others assiduously wipe the beak on a twig, as if the performance had been disagreeable; but then this occurs after food is taken, as well. I have noticed that the little Social Sparrows (Hair-bird) may have one place of deposit for the pellicles. For one brood they used the dead limbs of a plum tree exclusively, and none was ever dropped on the way.

There is a large field here for further observation. Let us hope for more of this, and for something further on this special topic.—JAMES NEWTON BASKETT, *Mexico, Mo.*

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## RECENT LITERATURE.

Rothschild and Hartert's 'Review of the Ornithology of the Galapagos Islands.'<sup>1</sup>—The Galapagos Islands have come to be ornithologically classic ground in consequence of the numerous special papers that have appeared upon the birds of this exceedingly interesting archipelago. In

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<sup>1</sup> A Review of the Ornithology of the Galapagos Islands. With Notes on the Webster-Harris Expedition. By Hon. Walter Rothschild, Ph.D., and Ernst Hartert. *Novitates Zoologicae*, Vol. VI, pp. 85-205, pll. v and vi, August, 1899.

1837 John Gould published a paper on the Ground Finches collected there by Darwin on his famous voyage; in 1870 Sclater and Salvin published a paper on Dr. Habel's collection of Galapagos birds, followed in 1876 by Salvin's special memoir 'On the Avifauna of the Galapagos Archipelago'; in 1871 Mr. Ridgway published the final results of his work on the Baur and Adams collection; and we have in the present memoir a report on the Webster-Harris collection, made in 1897.

The Webster-Harris expedition was suggested to Mr. Frank B. Webster of Hyde Park, Mass., by Mr. Rothschild "towards the end of 1896," and the expedition set out in March, 1897, "under the command of Mr. Charles Miller Harris as chief naturalist and Mr. S. A. Robinson as sailing master, Messrs. James Cornell, O. E. Bullock, and George Nelson as collectors." The party went to Colon with the intention of there chartering a suitable vessel for the cruise. While there Robinson, Cornell, and Bullock "contracted yellow fever and died, partly at Colon, and partly on their voyage" to San Francisco, where Nelson gave up the trip and returned home. Here Mr. Harris, after some delay, chartered the two-masted schooner 'Lila and Mattie,' and secured Messrs. R. H. Beck, F. P. Drowne, and C. D. Hull as collectors. The original plan of making extensive collections at Guadalupe Island in the Revillagigedo Group, and at Cocos Island had to be abandoned, owing to the unfortunate delay in starting, only a short stay being made at Clarion Island, on the way to the Galapagos. The party left San Francisco June 21, 1897, sighting Clarion Island July 2, where a couple of days were spent collecting; leaving Clarion Island July 4, the party reached Culpepper Island, Galapagos, July 26, where work was carried on continuously till Dec. 28, the islands of practically the whole group being visited, and San Francisco was reached, on the return trip, Feb. 8, 1898.

The diaries of Messrs. Harris and Drowne are printed (pp. 86-135) as introductory to the main paper, and contain much interesting information respecting the experiences of the party and their work, as well as important information on the character of the islands visited and their natural products. Then follows 'General Remarks about the Fauna of the Galapagos Islands' (pp. 136-142). The material available for investigation by the authors numbered "not less than 3075 skins from the expedition under Mr. Harris, and the Baur collection of about 1100 skins," besides access to Gould's and Salvin's types in the British Museum. The Baur collection, now principally in the Tring Museum, contains also Mr. Ridgway's types and topotypes of the species described by him from the Baur collection. "This material," say the authors, "is perhaps larger than any material ever brought together from any area of similarly small dimensions. Although we must admit that we are still sadly in want of biological observations upon many of the birds, and of all knowledge of the nidification and eggs of the land-birds, we can hardly believe that this vast material is 'still too fragmentary to warrant any serious attempt to

solve the problems to which Mr. Darwin first called attention.' If such collections are not sufficient to throw light upon these problems, no collections will ever do so; and we cannot see how the discovery of five or six more subspecies of land-birds, or of some more accidental visitors, can alter our present conclusions." These are: "I. The entire fauna of the Galapagos Islands [was] derived originally from America. II. It is uncertain whether there has ever been a land connection between the various islands and between the islands and the continent or not." In opposition, however, to Dr. Baur's theory that the islands were once connected with America and with each other, and were submerged in or after the Eocene period, it is stated that the geological evidence "is opposed to a former land connection with America"; and that Dr. Baur's supposition that the original number of species on this land-mass was small, and that as this mass of land became submerged, and the few original species which inhabited the whole area, having become restricted to the former mountaintops, now islands, became differentiated in many different forms through isolation, is less reasonable than the hypothesis that they reached their present homes at different times from the neighboring mainland.

Section V, 'The Birds of Galapagos Islands,' occupies pages 142-199, and includes 108 species and subspecies, of which 9 are given as of either doubtful validity or doubtful occurrence. Of the 65 land-birds all but 5 are forms peculiar to the islands, and there are also nine water-birds peculiar to the islands. The remaining 31 species (excluding the doubtful forms) are for the most part wide-ranging seabirds or North American migrants.

Fourteen new forms have been described from the Harris collection (mostly subspecies), of which six are described for the first time in the present memoir. The most noteworthy of these discoveries is the flightless Cormorant (*Phalacrocorax harrisi* Rothsch.) from Narborough Island, where it was found only in the surf, its wings being too small to enable it to fly.

Compared with Mr. Ridgway's 'Birds of the Galapagos Archipelago' (reviewed in this Journal, XIV, July, 1897, pp. 329, 330), there are numerous noteworthy differences, as with the 14 species added by Messrs. Rothschild and Hartert the total number recognized is only 108, as against 105 in Mr. Ridgway's list, while there are important differences in the nomenclature adopted. For example, Messrs. Rothschild and Hartert have for the first time used trinomials for the local forms of Passeres, explaining: "If trinomials are used everywhere else, there is no reason why the birds of the Galapagos Islands should be deprived of this most useful form of nomenclature. In cases where certain individuals of representative forms are hardly, if at all, distinguishable but where a series is easily separable, the recognition of subspecies is inevitable." It thus follows that in many cases where Mr. Ridgway used a binomial, the present authors use a trinomial. Rothschild and

Hartert also decline to recognize the genera *Cactornis* and *Camarhynchus* Gould, placing the whole group of thick-billed Finches, to the number of 35 forms, under *Geospiza*, notwithstanding the enormous difference between the two extremes of the series. (The extraordinary intergradation in the size and form of the bill is shown in Pl. vi of the memoir.) In consequence of the much larger amount of material available for examination, a number of Mr Ridgway's forms are synonymized with others, notably in the genus *Pyrocephalus*, where the number of species is reduced from six to two.

There is yet much to learn of the life histories of the birds of the Galapagos Islands, and probably some new forms to be discovered, but, as our authors claim, little new light is to be expected respecting the origin of the avifauna and its relation to that of other countries. That it is American in origin in respect to all its elements there seems no reason to doubt, and that in the evolution of its forms it presents no features not found, in more or less marked degree, in numerous other groups of islands. — J. A. A.

**Salvadori and Festa on Birds of Ecuador.**<sup>1</sup> The second and third parts of this report have now appeared, completing this valuable contribution to South American ornithology.<sup>2</sup> The first part included the Passeres oscines, the second part the Passeres clamatores, and the third and concluding part the Trochili and remaining groups. Part I contained 165 species, including 5 new to science and 10 new to Ecuador; Part II included 181 species, with 6 new to science and 7 new to Ecuador, and Part III, 266 species, of which 4 are described as new, and 34 are first recorded from Ecuador. The total number of species enumerated is 611, of which 17 were new to science and 51 new to Ecuador. The report includes much important technical matter, a record of the sex, date and place of capture of the specimens, and references to all the previous Ecuadorian records for each species, giving the localities from which they have been recorded.

Ecuador is considered to be divisible into four physiographical regions, namely, a Western, an Inter-Andean, an Eastern, and the Andean proper, each characterized by differences of altitude, temperature, humidity and vegetation. The birds especially characteristic of these several regions are briefly indicated.

As already noted, this carefully prepared report on Dr. Festa's large collection from Ecuador is not only an important contribution to South American ornithology but an especially valuable addition to our knowledge of the Ecuadorian ornis. — J. A. A.

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<sup>1</sup> Viaggio del Dr. Eurico Festa nell' Ecuador. T. Salvadori ed. E. Festa. Ucelli. Part seconda, Passeres clamatores. Boll. Mus. Zool. ed Anat. Comp. d. R. Univ. di Torino, XV, No. 236, pp. 1-34, Nov. 1899. Parte terza, Trochili-Tinami. Ibid., No. 398, pp. 1-54. Feb. 19, 1900.

<sup>2</sup> For notice of Part I, see Auk, Jan. 1900, pp. 81, 82.