near the celebrated pitch lake at La Brea, in northeastern Venezuela. The twenty days' observations there made are the basis of the present paper, which gives a short account of the general character of the region, followed by an annotated list of about 140 species of birds, of which 22 were breeding. The notes on the habits of many of the species are quite extended, occupying from half a page to several pages, as in the case of the Yellow-backed Cassique. The paper closes with 'Part V. Ecological Conclusions,' in which is made a comparison of the bird life of Venezuela with that of the State of New York, with a full-page chart illustrative of "Arboreal Adaptive Radiation."— J. A. A.

Report on the Immigration of Summer Residents in England and Wales in the Spring of 1908.— The fourth Report of the Committee of the British Ornithologists' Club on the spring migration of birds into England and Wales during 1908 forms, as usual, a special volume of the 'Bulletin' of the Club.[1] This report is similar in character to those of previous years, giving first an account of the weather for each day of the period covered by the immigration (March 14–May 31), noting as well the daily arrivals of birds, followed by details of the chief movements observed at the lights during the same period, with maps for each of the thirty-three species scheduled. There are also notes on migratory movements during the autumn of 1907, and records from the lighthouses and lightships for the same period. As heretofore, generalizations relating to the general subject are held in reserve and will not be attempted till the observations have been continued for a much longer period.— J. A. A.

L. H. Miller on California Fossil Birds.— Recent exploration of the Quaternary asphalt Rancho La Brea beds in southern California has resulted in the discovery of abundant remains of birds as well as mammals, part of which represent forms now living in California, while part belong to extinct types only remotely allied to any known living forms. These asphalt beds have for ages proved a trap for the unwary bird or mammal that chanced to visit them. The oil from the oil strata that is forced to the surface accumulates in the natural depressions of the surface as small lakelets, which through evaporation become "masses of a plastic and marvelously tenacious and tar-like substance." Mr. Miller describes[2] these tar-pools as possessing "the mirror-like surface of water and, especially at night, might be mistaken for such; yet the bird whose wing-tip touches the innocent looking surface, or whose foot plashes into its margin,

[1] Report on the Immigration of Summer Residents in the Spring of 1908: also Notes on the Migratory Movements and Records received from Lighthouses and Light-vessels during the Autumn of 1907. By the Committee appointed by the British Ornithologist's Club.= Bulletin of the British Ornithologists' Club, Vol. XXIV, November, 1909. Pp. 235, with 29 maps.

[2] Fossil Birds of the Quaternary of Southern California. By Loye Holmes Miller. The Condor, Vol. XII, Jan., 1910, pp. 12–15.

is as surely doomed as though caught in the jaws of a more active enemy. In rainy season the depression becomes further filled with the addition of a super-stratum of water which may cover the tar surface to a depth of several inches, remaining fairly pure water for some time before it becomes polluted by the rise of the lighter constituents of the oil layer. Animals, small and large, wade rashly into the treacherous trap thus baited with that rare luxury of the region, water. The struggling victim becomes again bait for the predatory forms, and all in turn tempt the carrion feeder. To-day, as in ages past, the trap is at work. Barn Owls, Great Blue Herons, Meadowlarks and other birds have been noticed in the surface pools, still in the flesh" (*l. c.*, p. 13).

This treacherous region is situated ten miles west of Los Angeles, California, on the old Rancho La Brea, formerly a grain and stock ranch, from which these fossiliferous asphalt strata have been named by Prof. J. C. Merriam the "Rancho La Brea Formation."

The avian remains which have been collected from these beds have been studied by Mr. Miller, who has published two papers describing two remarkable extinct types. His first paper[1] deals with a fossil species of Peacock, represented by a series of well-preserved tarso-metatarsal bones, which are shorter and stouter than those of *Pavo muticus*, and much larger than those of the common peacock. On the basis of this determination Mr. Miller proceeds to comment on the former distribution of the genus *Pavo*, fossil forms of which have been recorded from the Tertiary and Quaternary formations of Europe and India, in comparison with its present restricted range, the wild stock being now confined to southern Asia.

The other form described by Mr. Miller[2] is a raptorial bird, much larger and otherwise so different from any of the existing birds of prey, that the propriety of recognizing it as referable to a new family (Teratornithidæ) is suggested. The species is represented by parts of several skulls and other important fragments of the skeleton, as the sternum and pectoral arch. The species is named *Teratornis merriami*, in honor of Prof. John C. Merriam of the University of California, so well known for his important investigations of the Quaternary vertebrate fossils of California. From the comparative figures given of the reconstructed skull of *Teratornis* and of skulls of the California Condor and Bald Eagle, it is shown that *Teratornis* was a bird of immense bulk, at least twice the size of the Condor and several times larger than the Bald Eagle.

Among the avian species thus far found in the Rancho La Brea beds are the existing California Condor, the Turkey Vulture, Golden Eagle, various species of hawks and owls, geese, the Great-Blue Heron, and Raven. The

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[1] *Pavo californicus*, A Fossil Peacock from the Quaternary Asphalt Beds of Rancho La Brea. By Loye Holmes Miller. University of California Publications, Bulletin of the Depart. of Geology, Vol. V, No. 19, pp. 285–289, pl. xv. August, 1909.

[2] *Teratornis*, a new Avian genus from Rancho La Brea. *Ibid.*, V, No. 21, pp. 305–317, with 11 text figures. September, 1909.

extinct species include an indeterminate species of stork, crane, pheasant, etc., besides the two extinct species already mentioned, and a Black Vulture, considered to be specifically distinct from the existing species and (in a footnote) named *Catharista occidentalis.*— J. A. A.

Ticehurst's 'A History of the Birds of Kent.'— The County of Kent, in the southeast of England, is an area of small extent, with a length of some 64 miles and an average breadth of about 26 miles. It is for the most part low, much of it below one hundred feet above sea-level and only small portions reach an elevation of 500 feet. It is, however, rich in bird life, which has had frequent historians, at least for portions of the County. Mr. Ticehurst states that "some eighteen books or pamphlets have been written dealing with the avifauna of the whole or a part of Kent or containing lists of birds that have been found in different districts," the first historian having been William Boys (1735–1803), who obtained the type specimens of the Sandwich Tern, the Dartford Warbler and the Kentish Plover, all described by Latham from specimens obtained by Boys at Sandwich, in Kent. Mr. Ticehurst, however, is the first to take up the work exhaustively, and to produce a monograph [1] that will long be the standard on the subject. An introduction of some 30 pages treats of the topography, geology, and vegetation, and the relation of these features to the avifauna; the local migration, number of species, the local museums and collections that contain Kentish specimens, and the work of former authors on the birds of Kent. From this we learn that the species entitled to be recognized as birds of Kent number 312, with 42 others whose claims to such recognition are considered doubtful, but which are presented in bracketed paragraphs. "Of the 107 species which breed regularly in Kent 37 are purely summer visitors and 70, whether migratory or not, may be found in the county throughout the year."

The main text takes up the species in systematic sequence, beginning with the Thrushes, with reference to their manner of occurrence in Kent, special consideration being given to the subject of their local movements and migrations. Following the names of each species references are given to the principal works on Kentish birds, citing the names only of the authors and page references to their works, which are listed, with their full titles, in a bibliography of the books and periodicals consulted (pp. xxv–xxix), while the original records, in the case of the rarer species, are cited in footnotes.

On casually turning the pages of the work one may be struck with the antiquated character of the technical nomenclature, but this is explained in the preface as follows: "With regard to the vexed questions of nomen-

[1] A History | of the Birds of Kent | By | Norman F. Ticehurst, | M. A., F. R. C. S., F. Z. S., M. B. O. U. | With twenty-four plates and a map | Witherby & Co.| 326 High Holborn London | 1909 — 8vo, pp. i-lvi + 1–568, 24 half-tone plates, and a large colored map. Price, 21s. net.