

but just what species are used, how they are obtained, and to what extent employed, are matters respecting which we have hitherto had very little definite information. Captain Collins's 'Notes' are therefore particularly welcome, not only for the information they convey on these points, but also respecting the relative abundance of the sea birds met with on the Fishing Banks, their habits, seasons of occurrence, and migrations. It appears that any species that can be easily captured by the fishermen is used as bait, the larger kinds, as the Shearwaters, Gulls, and Jægers being preferred. The species captured in largest numbers is the Greater Shearwater (*Puffinus major*), of which hundreds are sometimes taken in a few hours. Nearly half of the paper is devoted to a very interesting and detailed account of the habits of this bird and the manner of its capture, the latter being illustrated with a plate entitled 'Hag fishing.'—J. A. A.

Stejneger on Trinomials in American Ornithology.*—The object here in view seems to be to show (1) that trinomials "are neither an American invention nor were they first applied in America to the extent which they are now occupying in this country," and (2) that "the trinomials of present American ornithology can with great propriety be said to date from 1858" (rather than later), when a small number were employed by Professor Baird in his great work on North American birds, to which epoch-making volume is attributed the origin of the 'American School.' In regard to the first proposition, it is claimed that the Swedish ornithologist, Carl Sundevall, is the "father of modern trinomialism in ornithology," who in 1840 began to "treat systematically the ill-defined species as geographical varieties, which he provided with a third name in addition to the specific appellation." "He was followed closely by Herman Schlegel, who, in 1844, applied the system to all the European birds in his 'Revue critique des oiseaux d'Europe;'" who not only adopted the subspecific name without the intervention of any connecting word or letter, but also acknowledged the applicability of the law of priority to trinomials. "For every 18 binomials this first trinomialistic list [Schlegel's] of the birds of Europe contained 1 trinomial." He was soon also followed more or less freely by other prominent European ornithologists. J. H. Blasius, in 1861, in a list of European birds, designated 92 subspecies by trinomials or quadrimomials; "in other words, for every 5 $\frac{2}{3}$ binomials we find 1 tri- or quadrimomial." In 1871 Alph. Dubois, in his 'Conspectus systematicus et geographicus Avium Europæarum,' used trinomials for the designation of 'climatic varieties,' of which there were 125 in a list of 475 species.

As regards the second proposition, attention is called to the fact that Cassin employed, as early as 1854, trinomials for the geographical races of *Bubo virginianus*; that Baird sparingly made use of trinomials in similar cases in 1858, and quite frequently in 1864-1866; that Bryant, in 1865 and 1866, used them freely, and fairly committed himself to their adoption

* On the Use of Trinomials in American Ornithology. By Leonhard Stejneger, Proc. U. S. Nat. Mus., 1884, pp. 70-81, July 1, 1884.

for certain West Indian birds. They also occasionally crept into Mr. Lawrence's papers in 1871. At this time (1864-1871), as Dr. Stejneger observes, "trinomial were in the air infecting all." In 1872 the system of trinomial for geographical races, or subspecies, may be said, however, to have been first formally avowed and adopted, having been used systematically by Coues, Ridgway, and Allen, in papers or works published during that year—by the latter in a paper* published in July, by Dr. Coues in his 'Key,' published in October, and by Mr. Ridgway in a paper† published in December. They had also been adopted by the authors of the 'History of North American Birds,' the greater part of the first volume of which was put in type during 1872,‡ although the work was not published till January, 1874.

Dr. Stejneger also calls attention to the chief objection to trinomialism which has thus far been raised, namely its liability to abuse by indiscreet authors, and arrives at the conclusion that this danger is not very formidable; it being found by actual count that as regards North American birds described between 1871 and 1881, that "the percentage of the untenable trinomial is vastly smaller than that of the binomial," and that if trinomial had not come into use several of the forms described under trinomial would have entered the list of synonyms as pure binomial.

Finally Dr. Stejneger takes up and very ably answers the questions, "(1) Is it necessary to recognize those slight differences which are seen in the so-called local races? (2) Is it necessary to have them designated by a separate name? (3) Why is the trinomial designation to be preferred?" Those who may still have doubts on these points would do well to carefully weigh the replies Dr. Stejneger gives to these questions.—J. A. A.

Baird, Brewer, and Ridgway's Water Birds of North America.§—The publication of the long-looked-for 'Water Birds of North America,' by Baird, Brewer, and Ridgway, is *the* event of the year 1884 in the history of North American ornithology. Beyond the necessarily brief treatment bestowed upon the group by Dr. Coues in the two editions of his 'Key,' the Water Birds of North America, while by no means wholly neglected, especially as regards their nomenclature and classification, have not as a

* 'Orn. Reconm.' etc., in Bull. M. C. Zool., III, pp. 113-183, July, 1882. See especially p. 119, where the use of varietal names is formally advocated, and 'this method' stated to be 'already in more or less common use.'

† 'On the Relation between Color and Geographical Distribution in Birds,' etc., in Am. Journ. Sci. and Arts (3) IV, pp. 454 *et seq.*, Dec., 1872.

‡ Cf. Am. Journ. Sci. and Arts (3) IV, p. 457.

§ Memoirs of the Museum of Comparative Zoölogy at Harvard College, Vols. XII and XIII. The Water Birds of North America. By S. F. Baird, T. M. Brewer, and R. Ridgway. Issued in continuation of the publications of the Geological Survey of California. J. D. Whitney, State Geologist: Boston. Little, Brown, and Company, 1884. 2 vols. 4to. with numerous illustrations in the text. (Vol. I, pp. i-ix, 1-537, June, 1884; Vol. II, pp. i-vi, 1-552, August, 1884.) Issued with both plain and colored plates.