

notes on the 52 species of land birds abound in items of interest, much more space is devoted to the remaining 40 species of water birds, the account of which forms by far the most important part of the paper. While want of space forbids an extended notice of this very interesting paper, attention may be called to the notes on the Greater Yellow-leg (*Totanus melanoleucus*), of the breeding of which on Anticosti, where it was abundant, Mr. Brewster secured the 'strongest circumstantial evidence'; to the notes on the Gannet (*Sula bassana*), the Cormorants, Gulls, Petrels, Shearwaters, and the various species of the family Alcidae. A very interesting account is given of the Kittiwake Gull (*Rissa tridactyla*), of which two young birds were taken when but three or four days old and kept as pets. They ate freely of fish, but soon pined, and in two days one of them died, it being impossible to induce them to drink. The survivor was placed in a basin of salt water, hoping that a bath might prove beneficial. To the surprise of all, he instantly began to drink, swallowing the sea-water with evident satisfaction. After this the pet gave no trouble; he had his dish of sea-water constantly within reach, and thrived finely, but could never be induced to partake of fresh water. This seems to settle the often-raised question as to how sea birds slake their thirst, at least so far as the Kittiwake is concerned, which would have perished had it not been furnished with sea-water. Very suggestive also are the remarks about Wilson's Petrel (*Oceanites oceanicus*), the breeding of which seems still to remain a mystery. While a common summer bird off our coast from Virginia to the Gulf of St. Lawrence, its breeding grounds still remain to be discovered. Mr. Brewster found on dissecting specimens shot at various times between June 17 and July 25 no evidence that the species was breeding. He therefore hazards the conjecture that "Wilson's Petrel breeds in winter or early spring in tropical or subtropical regions, and visits the coast of the northeastern United States *only in the interim between one breeding season and the next*," and gives his reasons at length for this opinion. He also extends the same generalization to the Shearwaters (*Puffinus major* and *P. fuliginosus*), both of which occur off our northern coast *in summer*, but have never been found breeding. In this opinion he is confirmed by the experience of Capt. J. W. Collins, as detailed in 'The Auk' (I, p. 237), and in the paper which forms the subject of the notice which next follows. As already intimated, the notes on the Common Puffin and the Guillemots are extended and replete with interest. In fact, few papers of so great importance relating to our birds have recently appeared, the matter being not only fresh and original, but attractively presented.—J. A. A.

**Collins's Notes on the Sea Birds of the Fishing Banks.\***—As is well-known, various sea-birds have long been used by fishermen for fish bait,

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\* Notes on the Habits and Methods of Capture of various species of Sea Birds that occur on the Fishing Banks off the Eastern Coast of North America, and which are used as bait for catching Codfish by New England Fishermen. By Capt. J. W. Collins. Ann. Rep. of the Comm. of Fish and Fisheries for 1882, pp. 311-338, pl. i. (Separates issued August, 1884.)

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

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