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Note on the occurrence of a species of Bothriceps in the Karoo System of South Africa

R. Lydekker

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BIBLIOGRAPHICAL NOTICE.

An Illustrated Manual of British Birds. By HOWARD SAUNDERS, F.L.S., F.Z.S., &c. Parts xiii.-xx.

THE issue of the concluding part of this book imposes upon us the pleasing duty of congratulating the Author of what may certainly be considered one of the most useful of recent publications. The accuracy which marked the earlier portion has been fully sustained in the remainder, and no pains have been spared to render the volume as complete as possible; while, without adding to the estimated expense, maps have been furnished of the United Kingdom, Europe, and the North Polar district, showing the elevation of the land and the depth of the surrounding seas in the first two cases. The labour involved in the constant condensation necessitated by the plan of the work must have been enormous, especially in such articles as those on the Red Grouse, Curlew, Great Bustard, and Great Auk; yet we notice that space is found for many useful details—for example, the critical differences between the Arctic, Common, and Roseate Terns, the Slavonian and Eared Grebes, the Arctic and Long-tailed Skuas, the eggs of the Guillemot and Razorbill.

The new woodcut of the Great Auk is taken from Bullock's Orkney specimen, while the Killdeer and Sociable Plovers, the Mediterranean Black-headed Gull, the Solitary Sandpiper, the Lesser Golden Plover, and the White-billed Northern Diver are recognized as British birds, and the first three are figured. The Spotted Sandpiper, on the other hand, is now rejected. Besides this, the names Wedge-tailed Gull, Bonaparte's Gull, and Little Tern have been substituted for Cuneate-tailed Gull, Bonapartian Gull, and Lesser Tern, which were employed by Yarrell and which Mr. Saunders evidently felt constrained to employ in the 4th edition of the work which bears that author's name; the changes rendered possible by the absence of that feeling being decided improvements. A new derivation is suggested for the word 'Avocet;' the discovery of the Pectoral Sandpiper's eggs has been made since the 4th edition of 'Yarrell' appeared; and a probable occurrence of the Great Auk in the St. Kilda group has been lately brought to light.

In the Appendix, among further notes on several species, are to be found important records of the breeding of the Sand-Grouse and Snow-Bunting in Scotland, with the capture in Britain of *Emberiza cioides*. The Introduction contains a list of the families and genera, with characters of the latter; while in the full and thorough Index we are glad to see that different type is used to distinguish the above as well as the species, and that in cases of local or little-known names the usual English equivalents have been added in brackets, to avoid the necessity of a double reference.

 MISCELLANEOUS.

Note on the Occurrence of a Species of Bothriceps in the Karoo System of South Africa. By R. LYDEKKER.

SPECIMENS of skulls of a small Labyrinthodont from the Karoo System of the Orange Free State preserved in the British Museum

(nos. R. 506-508) agree so closely in general characters with the genus *Bothriceps*, Huxley, presumably from the Hawkesbury Beds of Australia, that they may be regarded as indicating a new species of that genus, for which I propose the name *Bothriceps Huxleyi*.

The skull of this species is distinguished from that of the typical *B. australis* by its smaller size and narrower contour, the extreme length being about $2\frac{3}{4}$ inches in the specimen which I take as the type (no. R. 507). The sculpture is of the pitted nature characteristic of the typical species of *Bothriceps*, which at once serves to distinguish this form from *Petrophryne*, Owen, which (as Prof. von Zittel has pointed out) appears to be inseparable from *Micropholis*, Huxley.

The occurrence of *Bothriceps* in the Australian Hawkesbury Beds and the Karoo System of the Cape district is paralleled by that of the Ganoid genus *Clithrolepis*, which Mr. Smith Woodward has recently recorded from the latter deposits.

On the Phosphorescent Infection of the Talitri and other Crustaceans.

By M. A. GIARD.

Several naturalists have noted the phenomenon of phosphorescence in Amphipoda of different groups and often badly determined (*Gammarus*, *Talitrus*, *Orchestia*, &c.). Tilesius, Viviani, Suriray, and Snellen van Vollenhoven have cited cases of this kind, and the Rev. T. Stebbing, in the admirable bibliography of his Report upon the 'Challenger' Amphipoda, has summarized these older observations. In most cases the observed phosphorescence did not belong to the animal itself. In *Talitrus*, especially, M. de Quatrefages has indicated the cause of this apparent phosphorescence; it is due to *Noctiluca* which attach themselves to the carapace of the Amphipod as they lie upon the damp sand after the retreat of the tide*. Therefore my surprise was great when, on the 3rd September last, I found on the beach at Wimereux a phosphorescent *Talitrus* of such intense and continuous lustre that the *Noctiluca* evidently had no part in the phenomenon. It was at 10 o'clock at night, and notwithstanding the brightness of the moon, then nearly at the full, the luminous *Talitrus* could be perceived at a distance of several metres. The light was greenish; it proceeded from the interior of the body of the Crustacean, which was completely illuminated to the extremities of the antennæ and legs, and presented no dark points except the two eyes, which formed two black spots upon this brilliant ground. The animal walked slowly upon the sand, instead of leaping briskly like its congeners. All search made on the same night and following evenings to find other *Talitri* in the same state were absolutely unsuccessful.

This excessive rarity of the phosphorescent *Talitri* upon a beach on which those animals exist in thousands led me to suppose that we had to do here with a parasitic action rather than a physiological peculiarity. Therefore the next day I examined under the microscope a leg cut off from the luminous animal. This limb proved to be stuffed with Bacteria swarming among the muscles, and particularly visible in the terminal joints, which were thinner and more transparent. Under the influence of this microbe the

* "Sur la phosphorescence de quelques Invertébrés marins," in Ann. Sci. Nat. sér. 3, vol. xiv. p. 236, 1850 (see also 'Silliman's Journal,' vols. xv. and xvi., and 'Annals,' ser. 2, vol. xii. pp. 15 and 180, 1853).