

XXIV.—On the Remains of a gigantic Bird (*Lithornis Emuinus*) from the London Clay of Sheppey. By J. S. BOWERBANK, F.R.S. &c.

THE first indication of the former existence of new and often very large animals is frequently afforded by small and comparatively insignificant fragments, and such is the case in the present instance.

Professor Owen has described, in his 'Fossil Mammals and Birds,' the remains of more than one species of the latter from the London clay, which specimens are in the collection of the College of Surgeons, and in those of Mr. Wetherell and myself; and since that period I have acquired another specimen, which appears also to be the remains of *Lithornis vulturinus*; but none of these birds could have exceeded in size one of the smaller species of the Gull tribe. The unassuming specimen that I now introduce to my readers as a portion of one of the long bones of a bird, surpasses in size a full-grown Albatross, a bird having an expanse of wing of about 12 or 13 feet.

I procured this fragment at Sheppey some years since, and had really forgotten it until it was brought to my recollection in consequence of the late Dr. Mantell having obliged me with the examination of some similar but somewhat smaller portions of bone of a *Pterodactylus* from the Wealden formation of the Isle of Wight, when the idea arose in my mind of the possibility of its turning out to be the remains of a Tertiary Pterodactyl of like dimensions to some of the larger chalk species; but on submitting a fragment of it to microscopical examination, I at once saw that there was not a trace of reptilian character in its structure, but that, on the contrary, the bone-cells and Haversian canals presented all the well-known peculiarities of form and arrangement that characterize the Bird tribe.

The length of the specimen is 4 inches, and the greatest diameter of the larger end is exactly 1 inch. At this part the section of the bone is trian-



gular, with the angles rounded off, and having two sides somewhat larger than the third one; the angularity decreases progressively to the other end of the specimen, and at that portion but faint traces of it are observable; at this end of the bone the greatest diameter rather exceeds 10 lines. The thickest portion of the walls of the bone, which is at the curves supplying the place of the angles at the larger end, is $1\frac{3}{4}$ line, while the thinnest portion in the same plane is about the middle of the shortest side of the triangular section, and does not exceed $\frac{5}{4}$ of a line.

These structural proportions, in combination with the microscopical characters and the great density of the walls of the bone, leave no doubt of the character of the animal to which this specimen has formerly belonged; and from the marks of muscular attachment, the form and other peculiarities, my friend Professor Quekett, who has examined the bone, is of opinion that it has formed part of the proximal end of a tibia belonging to a bird little if at all inferior in size to an Emu. On comparing the fossil with the tibia of an adult Emu, the skeleton of which was about 6 feet high, I found that the latter was 16 inches in length; and on measuring the diameter of the parts of the recent bone corresponding with those of the fossil one, they appeared to be as nearly as possible identical; and the remains of the impression of the muscular attachment, and of the orifice for the admission of the blood-vessel into the shaft of the bone, which are situated in the recent one within the first 6 inches of its length from the proximal end, are in precisely the same relative position in both specimens.

There is every appearance therefore, as far as the mutilated condition of the fossil will allow us to judge, that it has formed part of an ancient Struthious bird as large as, and probably closely allied to, the Emu. The section of the bone represented in the woodcut is taken at the transverse fracture, about one-third of the length of the specimen from the larger end.

XXV.—*Notes on the Ornithology of Ceylon, collected during an eight years' residence in the Island.* By EDGAR LEOPOLD LAYARD, F.Z.S., C.M.E.S. &c.

[Concluded from p. 115.]

257. NUMENIUS ARQUATA, Linn. *Coudrey-malley-cotan*, Mal. *Whelp*, Dutch.

Common along all the flat sea borders in company with



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