

I may observe that *P. tenuirostris*, Temm., of Japan &c., agrees with *P. anglorum* in the great length of the cnemial crest of the tibio-tarsus, and that *P. cinereus*<sup>1</sup> makes an approximation in this respect. In *P. fuliginosus* and *P. chlororhynchus*, however (as I have observed), the cnemial crest of the tibio-tarsus is of the short type of the specimen represented in fig. 14 of the Plate; and I would suggest that attention to the relative length of this crest may afford important aid in the specific determination of the Shearwaters.

## DESCRIPTION OF PLATE XXXVII.

- Figs. 1, 1 a. *Bubo*, cf. *cinerascens*, Guérin. Anterior and distal aspects of the distal half of the left tarso-metatarsus.  
 2, 2 a. *Milvus*, cf. *ictinus*, Savigny. Anterior and distal aspects of the left tarso-metatarsus.  
 3. *Aquila*, sp. Terminal phalangeal of the pes.  
 4, 4 a. *Coracias*, cf. *abyssinica*, Bodd. Anterior aspect of the left tibio-tarsus and tarso-metatarsus.  
 5. *Corvus corone*, Linn. Ventral aspect of the right coracoid.  
 6, 6 a. *Turdus musicus*, Linn. Anterior aspect of the left tibio-tarsus and tarso-metatarsus.  
 7, 7 a. *Coccothraustes vulgaris*, Pallas. Palmar and dorsal aspects of the right humerus.  
 8, 8 a. *Turdus*, cf. *musicus*, Linn. Palmar and dorsal aspects of the right humerus.  
 9, 9 a. *Alauda*, cf. *arborea*, Linn. Palmar and dorsal aspects of the right humerus.  
 10, 10 a. *Hirundo* (?) sp. Palmar and dorsal aspects of the left humerus.  
 11. *Columba*, cf. *livia*, Linn. Ventral aspect of the left coracoid.  
 12. *Coturnix communis*, Bonnaterre. Anterior aspect of the right tarso-metatarsus.  
 13, 13 a. *Puffinus fuliginosus*, Kuhl. Palmar and dorsal aspects of the right humerus.  
 14, 14 a. *Puffinus*, sp. 2. Anterior aspect of the right tibio-tarsus and tarso-metatarsus.  
 15, 15 a. *Puffinus*, cf. *anglorum*, Temminck. Palmar and dorsal aspects of the left humerus.  
 16, 16 a. *Puffinus*, cf. *anglorum*. Anterior aspect of the right tibio-tarsus and tarso-metatarsus.

All the specimens are represented of the natural size. Those in figures 1, 2, 3, 8, 9, and 10 are from the ossiferous breccia of Monte San Giovanni, near Iglesias, Sardinia; the others from a cave at Pietro Tampoia, Tavolara.

## 2. On Remains of a Large Stork from the Allier Miocene.

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[Received July 30, 1891.]

In his well-known work on the Fossil Birds of France, Prof. A. Milne-Edwards<sup>2</sup> described the remains of a Stork from the Lower

<sup>1</sup> See Milne-Edwards, *op. cit.* pl. 51. figs. 14, 15.

<sup>2</sup> Rech. Oiseaux Foss. de la France, vol. i. p. 460 (1867-68).

Miocene (Oligocene) of Allier under the name of *Pelargopsis magnus* (correctly *magna*). This species was of the approximate size of *Ciconia alba*; the genus being distinguished, among other characters, by certain features of the tarso-metatarsus, such as the larger relative size of the third trochlea, the narrower groove between the third and fourth trochleæ, and the higher position of the foramen in that groove. Again, the tibio-tarsus is more compressed at its distal extremity, and has no intercondylar tubercle near the bridge over the extensor tendons.

At the time of writing the British Museum 'Catalogue of Fossil Birds' I accepted the name *Pelargopsis*, having overlooked the circumstance that it is preoccupied by Gloger<sup>1</sup> for a genus of *Alcedinidæ*; I accordingly propose to replace this name by *Pelargodes*.

In another part of the work cited Milne-Edwards incidentally refers to a second Stork from Allier, under the name of *Argala arvernensis*. There is, however, no reference to the specimens on which this determination is based, and the name must accordingly be regarded as a MS. one; and the evidence for the existence of *Leptoptilus* (*Argala*) in these deposits is therefore at present unavailable.

In the 'British Museum Catalogue of Fossil Birds'<sup>2</sup> I described and figured the distal part of a tarso-metatarsus belonging to a Stork of somewhat larger size than *Pelargodes magnus* (as I will now call it), under the name of *Propelargus cayluxensis*, that specimen having been obtained from the Upper Eocene (Oligocene) Phosphorites of France. At the same time I recorded the distal extremity of a tibio-tarsus and the proximal end of a tarso-metatarsus from Allier which I thought might very probably belong to *Propelargus*, and possibly to the same species as the one from the Phosphorites. These specimens indicated birds of the approximate size of *Leptoptilus javanicus*, which is considerably larger than *Ciconia alba*.

The foregoing summary epitomizes, I believe, our knowledge of the larger *Ciconiida* of the lower European Tertiaries. Recently Mr. A. Smith Woodward put into my hands the right coracoid and the left metacarpus of a large bird from the Lower Miocene of St. Gérard-Le-Puy, Allier, which had been recently obtained for the British Museum. These specimens, which apparently belonged to one individual, are represented in the drawing (p. 478). I at once recognized that they indicated a large Stork; and on comparing them with the corresponding bones of *Ciconia alba* found that they considerably exceeded that species in size.

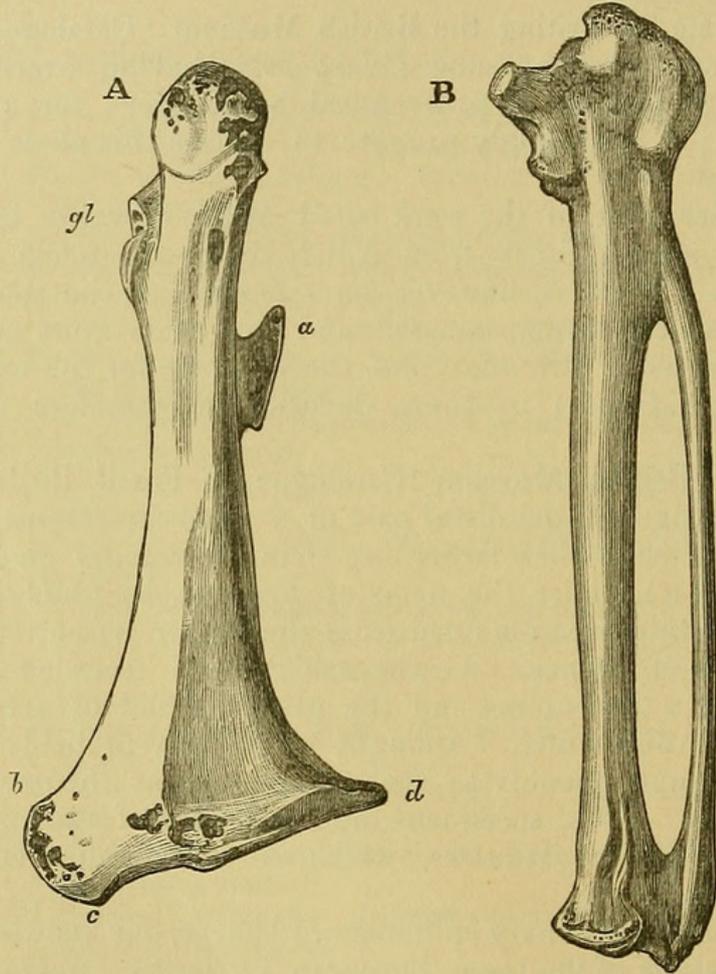
The right coracoid, of which the ventral aspect is represented in figure A, agrees so closely in contour with the corresponding bone of *Ciconia alba*, that it appears impossible to find characters by which it can be generically distinguished. Its total length is 0,112,

<sup>1</sup> Handbuch d. Naturgeschichte, p. 338 (1842).

<sup>2</sup> Pages 65, 66.

against 0,092 in the recent bone. In its long and slender form, comparatively slight distal expansion, small and hook-like hyosternal process, and recurved and lamelliform subclavicular process without any perforation at its base, as well as in the rounded anterior surface of the shaft, the fossil coracoid exhibits all the distinctive characters of the *Ciconiidae*.

The metacarpus (B of figure) presents the same relative excess



*Propelargus* (?) *edwardsi*.—Ventral aspect of the right coracoid (A), and left metacarpus (B). *a*, subclavicular process; *b*, hyosternal process; *c—d*, sternal border.  $\frac{2}{3}$ .

over the corresponding bone of *Ciconia alba* as exists between the fossil and recent coracoids. It appears to agree in every essential point of contour with the metacarpus of the White Stork.

Had I these two bones alone to deal with, I should have been disposed to refer them to *Ciconia*; but since the above-mentioned leg-bones of Storks found in the Allier Miocene present generic differences from *Ciconia*, it is more probable that the specimens under consideration are likewise referable to an extinct genus,—the generic variations in the form of the coracoid and metacarpus being frequently less well marked than in the bones of the leg.





Lydekker, Richard. 1891. "2. On Remains of a Large Stork from the Allier Miocene." *Proceedings of the Zoological Society of London* 1891, 476–479.  
<https://doi.org/10.1111/j.1096-3642.1891.tb01772.x>.

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