

Since the present specimens are so much larger than the corresponding bones of *Ciconia alba*, it seems certain that they cannot be referred to *Pelargodes magnus*, which is of the approximate dimensions of the latter. Compared, however, with the leg-bones of the unnamed Stork from Allier, which agrees more nearly in size with the larger *Leptoptilus javanicus*, and is provisionally referred in the Museum Catalogue to the genus *Propelargus*, the fossils under consideration agree so well in relative size that there is every probability that they belong to the same species. In the Museum Catalogue I suggested that the Allier *Propelargus* might prove to be inseparable from *P. cayluxensis* of the Phosphorites, on which grounds I refrained from assigning to it a separate designation. There is, however, no proof of this specific identity; many of the Mammals of the Phosphorites being distinct from those of the Allier Miocene—a larger proportion being, indeed, identical with those of the Paris Basin. Under these circumstances I propose provisionally to regard the coracoid under consideration as the type of a new species to be tentatively assigned to the genus *Propelargus*, with the title of *P. (?) edwardsi*. Even if this should prove to be identical with Milne-Edwards's *Argala arvernensis*, my name will still stand. The specimens here described are not only of interest from their unusually fine state of preservation, but also as proving the existence at a period as early as the Lower Miocene of a Stork of the dimensions of the smaller species of *Leptoptilus*, and evidently very closely allied to genera still existing.

3. On a new Species of Moa. By R. LYDEKKER, B.A.

[Received August 13, 1891.]

(Plate XXXVIII.)

The large number of more or less well-defined species of Moas already recorded from the superficial deposits of New Zealand¹ might have been supposed to have included all the members of that group which existed in those islands during the later geological epochs. Among a collection of Moa-bones recently purchased by the Hon. L. W. Rothschild I have, however, found an associated series of specimens clearly indicating an undescribed species, although one which, in my opinion, should be referred to a genus already established. By the courtesy of their owner I am enabled to bring these specimens under the notice of the Society; and I am especially glad to do this, since nearly all the known species of the group have been first described in its publications.

The specimens in question comprise the right femur and the two tibio-tarsi and tarso-metatarsi. They are all much weathered, and

¹ In the 'Cat. Foss. Birds Brit. Mus.' (1891) 18 named species of *Dinornithidæ* are provisionally recognized, while four unnamed forms may indicate as many additional species.

have their ridges and extremities abraded, apparently indicating that they have lain exposed for a long period to the action of the weather on the surface of the ground. Unfortunately, there is no record of the locality where the specimens were obtained. There are, indeed, other bones in the collection belonging to the typical species of the genus *Pachyornis*, which is known only from the South Island, but since they are in a different mineralogical condition, and evidently from another locality, no inference can be drawn from them as to the present specimens. As there are many specimens in the British Museum from the North Island (and none from the South) in the same condition as the latter, it appears probable that these specimens may be also from the North Island.

The proportions of the tibio-tarsus and tarso-metatarsus show that the affinities of this Moa are with the genera *Anomalopteryx*, *Emeus*, and *Pachyornis*, and that it is quite distinct from *Dinornis*, in which the tarso-metatarsus is long and slender, and the tibio-tarsus is long and straight. The tibio-tarsus (Plate XXXVIII. figs. 2, 2 a) has a length of 22 inches and a distal width of 2·9 inches. These dimensions are alone sufficient to distinguish this specimen from the corresponding bone of all the species of *Anomalopteryx* and *Emeus*. Thus in *Emeus crassus*, which is the largest representative of either of those genera, the tibio-tarsus has a length of 20·4 inches and a distal width of 3·3 inches. The present tibio-tarsus is, however, at once distinguished from the corresponding bone of all the species of both those genera (with the exception of the small *Anomalopteryx* [?] *geranoides*, which probably indicates a distinct genus) by the outward curvature of the shaft and the marked inflection of its distal extremity.

In these respects the tibio-tarsus before us resembles the corresponding bone of the type species of the genus *Pachyornis*, from which it is, however, readily distinguished by its more slender proportions. Thus in the typical *P. elephantopus* the tibio-tarsus has a length of 24 inches, with a distal width of 4·2 inches; while in an unnamed form¹ which not improbably indicates a distinct species the two dimensions are 20 inches and 3·5 inches. These measurements indicate conclusively that the present tibio-tarsus (in which, as I have said, these dimensions are 22 inches and 2·9 inches) cannot be referred either to *P. elephantopus* or to the unnamed species. A comparison of the individual specimens would render this still more apparent, the present tibio-tarsus being a slender bone recalling the straight tibio-tarsus of *Dinornis*, while the corresponding bone of these species of *Pachyornis* is un-ⁱⁿmarkable for its extremely stout and robust proportions.

We now come to the question whether the Moa represented by this slender type of inflected tibio-tarsus can be included in the genus *Pachyornis*; but before deciding this we must examine the other bones.

Firstly, with regard to the tarso-metatarsus, which is represented in Plate XXXVIII. fig. 3. Unfortunately the extremities of this

¹ Cat. Foss. Birds Brit. Mus. p. 318.

bone are so abraded that nothing can be gathered as to the contour of the trochleæ. Approximately, it has a length of 8·5 inches and a width at the middle of the shaft of 2·1 inches, while it measures about 5 inches across the distal trochleæ. In the tarso-metatarsus of *Pachyornis elephantopus* the corresponding dimensions are 9·4, 2·55, and 5·5 inches. The present specimen is therefore of a somewhat more slender type than the latter, but when complete appears to have had the distal trochleæ somewhat more expanded in comparison with the shaft and proximal extremity. There does not appear, however, to be any well-marked character by which it can be generically separated from *Pachyornis*. Compared with the typical species of that genus, somewhat more important differences are shown by the femur, of which the ventral aspect is represented in Plate XXXVIII. fig. 1. It may be observed that the femora of *Dinornis maximus* and *Pachyornis elephantopus* are contrasted in the Cat. Foss. Birds Brit. Mus. p. 223, fig. 57¹; the former being characterized by its great length and slenderness and the small size of the popliteal depression, while the latter is distinguished by its shortness and stoutness and the large size of its popliteal depression, which communicates with the inner surface of the shaft by a more distinct channel, as well as by other features noticed in the work cited. Now the femur of the present bird, while agreeing with that of *Pachyornis elephantopus* in the contour and dimensions of the popliteal depression and in the form of the linea aspera, somewhat approximates in its general proportions to the corresponding bone of *Dinornis*, as is shown by the following dimensions:—

	<i>Dinornis</i> <i>maximus</i> .	New species.	<i>Pachyornis</i> <i>elephantopus</i> .
Total length of femur	15·6	10·6	12·5 in.
Distal width of femur	6·9	4·9	6·5 in.

The present type of femur is in fact more like the corresponding bone of *Anomalopteryx* and *Emeus*. On the other hand, the femur which I have provisionally referred² to *Pachyornis immanis* has proportions much more like those of the present specimen, having a length of 14·4 and a distal width of 6·1 inches. This type of femur seems, indeed, to make it impossible to separate generically the present form from *Pachyornis*, to which genus I propose to refer it provisionally under the name *P. rothschildi*.

In the work cited (p. 318) I have stated that the genus *Pachyornis* approaches *Anomalopteryx*, so far as cranial characters are concerned, much more nearly than it does to *Emeus*, and the present species serves to approximate *Pachyornis* in regard to slenderness of limb to the same genus, although the inflection of the lower end of the tibio-tarsus remains as well marked as in the type species. In the 'Catalogue' I had very great hesitation in referring the limb-bones mentioned under the name of *Anomalopteryx* (?) *geranoides* to the

¹ In the description of this figure the scale is given as $\frac{1}{2}$ instead of $\frac{1}{6}$.

² *Op. cit.* p. 344.

genus under which they are placed, since they exhibit the same inflection of the lower end of the tibio-tarsus characteristic of *Pachyornis*, and the present species now induces me to regard these specimens as probably indicating a very small form of *Pachyornis*. As mentioned above, the typical species of that genus, like *P. immanis*, is known only from the South Island; but since most of the bones described as *A. (?) geranoides* were obtained from the North Island, while there is a presumption that the remains of the present form may likewise have come from there, it looks as though it was in the North Island that the typical species of *Anomalopteryx* and *Pachyornis* were differentiated from a common ancestor.

EXPLANATION OF PLATE XXXVIII.

Bones of *Pachyornis rothschildi*; from the superficial deposits of New Zealand.
 $\frac{2}{3}$ nat. size.

- Fig. 1. Back view of right femur.
 2, 2 a. Front and back view of left tibio-tarsus.
 3. Front view of left tarso-metatarsus.

4. Description of a remarkable Fish from Mauritius, belonging to the Genus *Scorpæna*. By Dr. A. GÜNTHER, V.P.Z.S.

[Received August 16, 1891.]

(Plate XXXIX.)

The subject of the following description formed part of a small consignment received from M. Robillard, of Port Louis, Mauritius. It differs very markedly in general appearance from typical *Scorpæna*, but, in my opinion, too much weight should not be laid upon modifications of form in fishes which so readily adapt their outward appearance to their surroundings. The fish when at rest on the bottom must closely resemble a stone on which seaweed has begun to grow. It may be named

SCORPÆNA FRONDOSA. (Plate XXXIX.)

D. 11. | $\frac{1}{9}$. A. $\frac{3}{5}$. P. 16. C. 16.

The head and body are much elevated and compressed, the depth being nearly one half of the total length without caudal fin; the small eyes are directed sideways, but occupy a prominent position on the upper profile of the head, and are separated from each other by a deep concavity the width of which equals the diameter of the orbit. The upper profile of the nape as well as that of the snout is deeply concave, the latter being compressed into a sharpish ridge. The cheeks are hollowed out, the cavity being bordered below by the præorbital bone. A bony crest on each side of the occiput.

The mouth is wide, slightly oblique, the maxillary extending beyond the vertical from the front margin of the orbit. Jaws armed with a



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