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AND THEN THERE WERE TWELVE: THE TAXONOMIC STATUS OF *Anomalopteryx oweni* (AVES: DINORNITHIDAE)

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ABSTRACT

Re-examination of the type material of *Anomalopteryx oweni* (Haast) indicates that this taxon should be synonymised with *A. didiformis* (Owen).

In his recent reassessment of moa taxonomy Cracraft (1976) accepted only 13 species as valid, in marked contrast to earlier taxonomic schemes (e.g. those of Hutton 1892, Rothschild 1907, Archey 1941, Oliver 1949), in which as many as 38 species had been accepted.

In this paper *Anomalopteryx oweni,* one of the taxa admitted by Cracraft, is reduced to junior synonymy with *A. didiformis,* thus leaving just 12 species in the family (see also Millener, 1981).

The species *Anomalopteryx oweni* (Haast, 1886) was founded upon an incomplete skeleton collected by T. F. Cheeseman in 1878 from a limestone cave near the Pataua River, Whangarei district — *not,* as Oliver (1949: 8) implied, from sand dunes at Pataua Beach. This type skeleton is held by the Auckland Museum (Cat. no. AM 9.9/384).

There has been considerable disagreement over the generic assignment of this species. Since Haast (1885, 1886) placed it in *Dinornis,* it has alternated between *Anomalopteryx* (e.g. Lydekker, 1891; Oliver, 1949; Cracraft, 1976) and *Pachyornis* (e.g. Archey, 1941; Brodkorb, 1963) depending apparently on whether cranial or post-cranial features were given diagnostic priority. A close re-examination

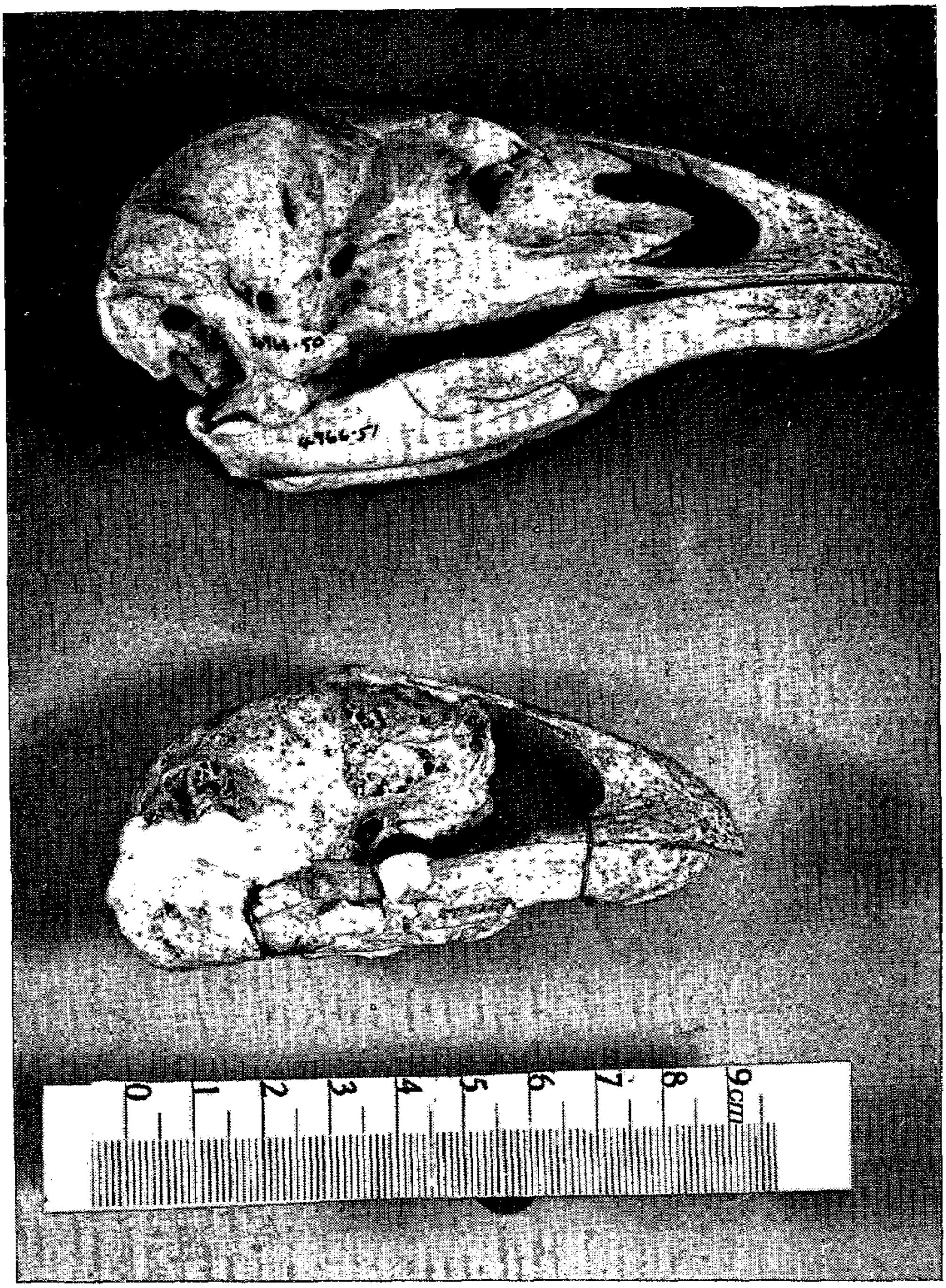

FIGURE 1 — **Anomalopteryx didiformis** skulls, lateral view.

Upper: AU4966 Gardner's Gut Cave, Waitomo

Lower: AM 9.9/384 Pataua River, Whangarei — skull of type **A. oweni.** Faulty reconstruction of this specimen has resulted in its being markedly foreshortened and dorsoventrally compressed (cf. Fig. 3)

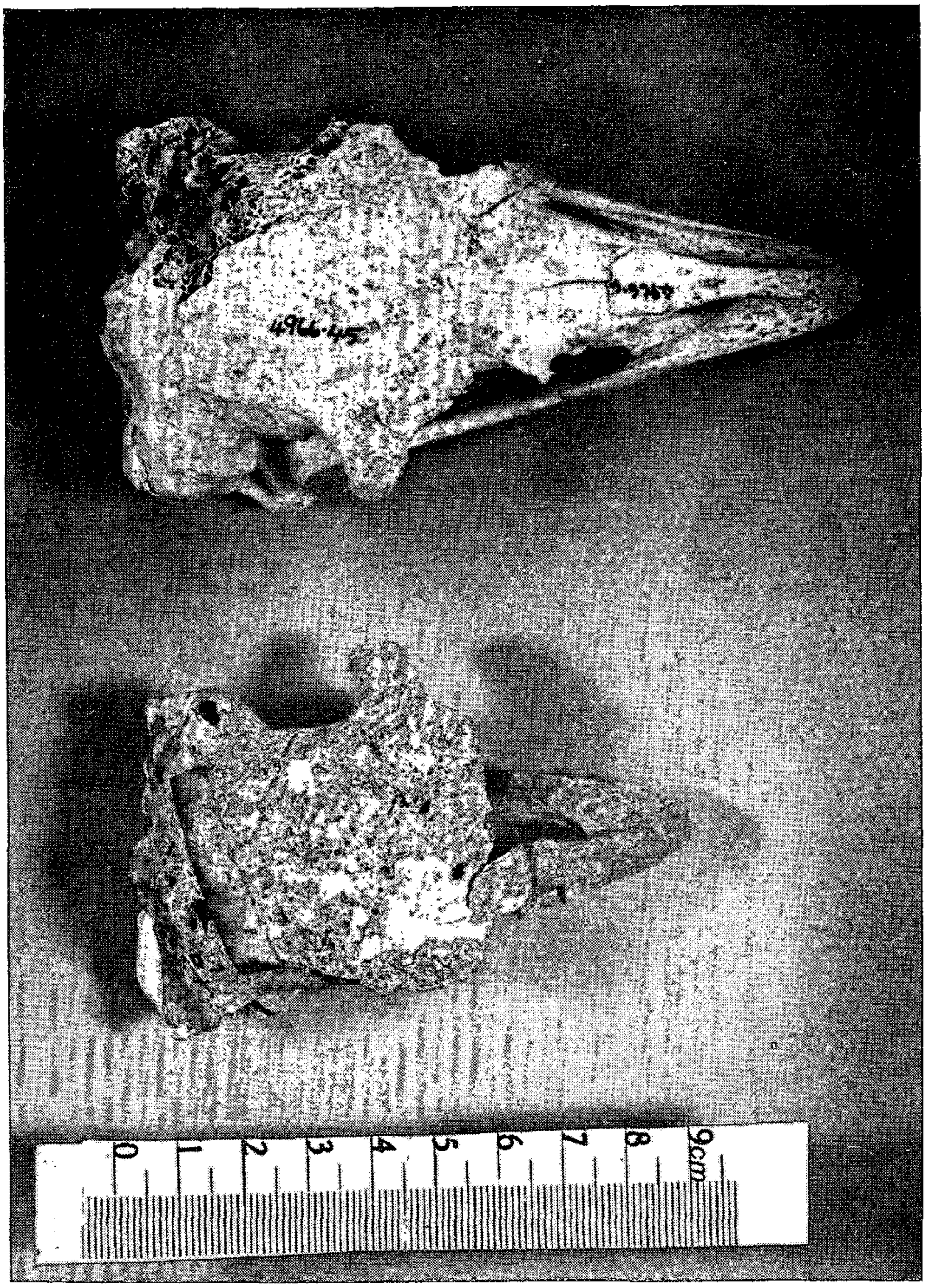

FIGURE 2 — **Anomalopteryx didiformis** skulls, dorsal view. Details as for Figure 1.

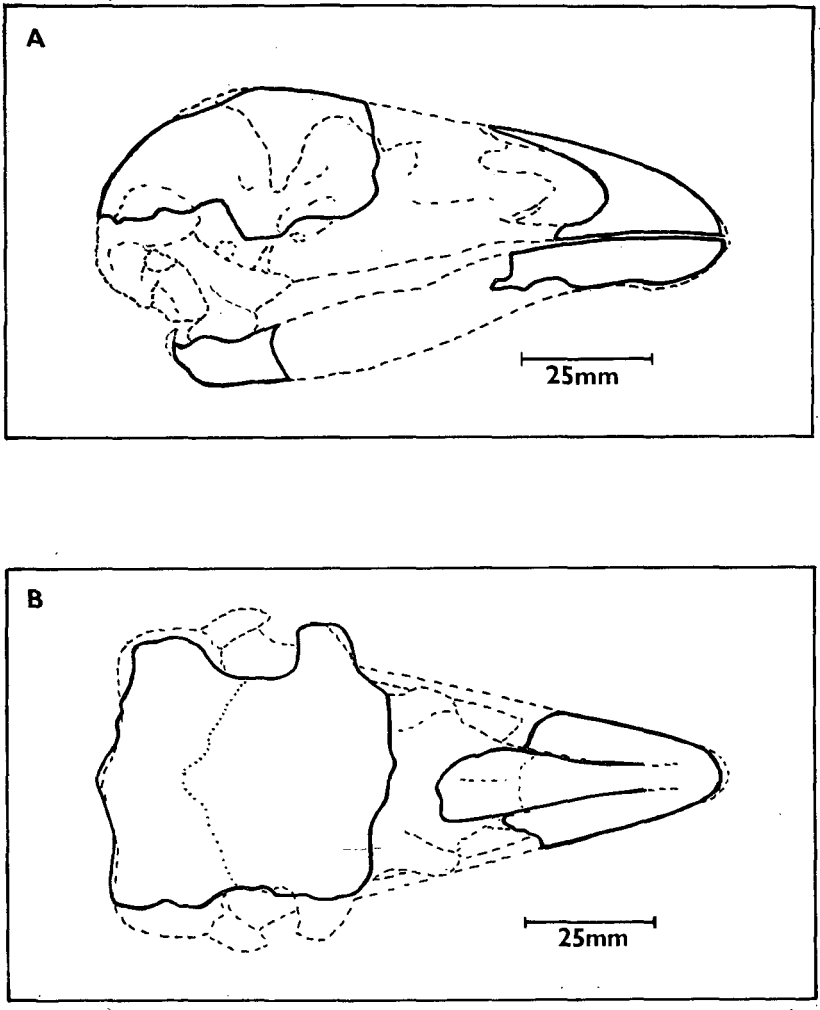

FIGURE 3 — A: Lateral view of skulls of **Anomalopteryx didiformis.** Dashed line —outline of AU4966. Solid line — superimposed outline of AM 9.9/384 (Type of **A. oweni**)

B: Dorsal view, as above. The incompletely fused frontoparietal suture of AM 9.9/384 is indicated by the dotted line across the cranium

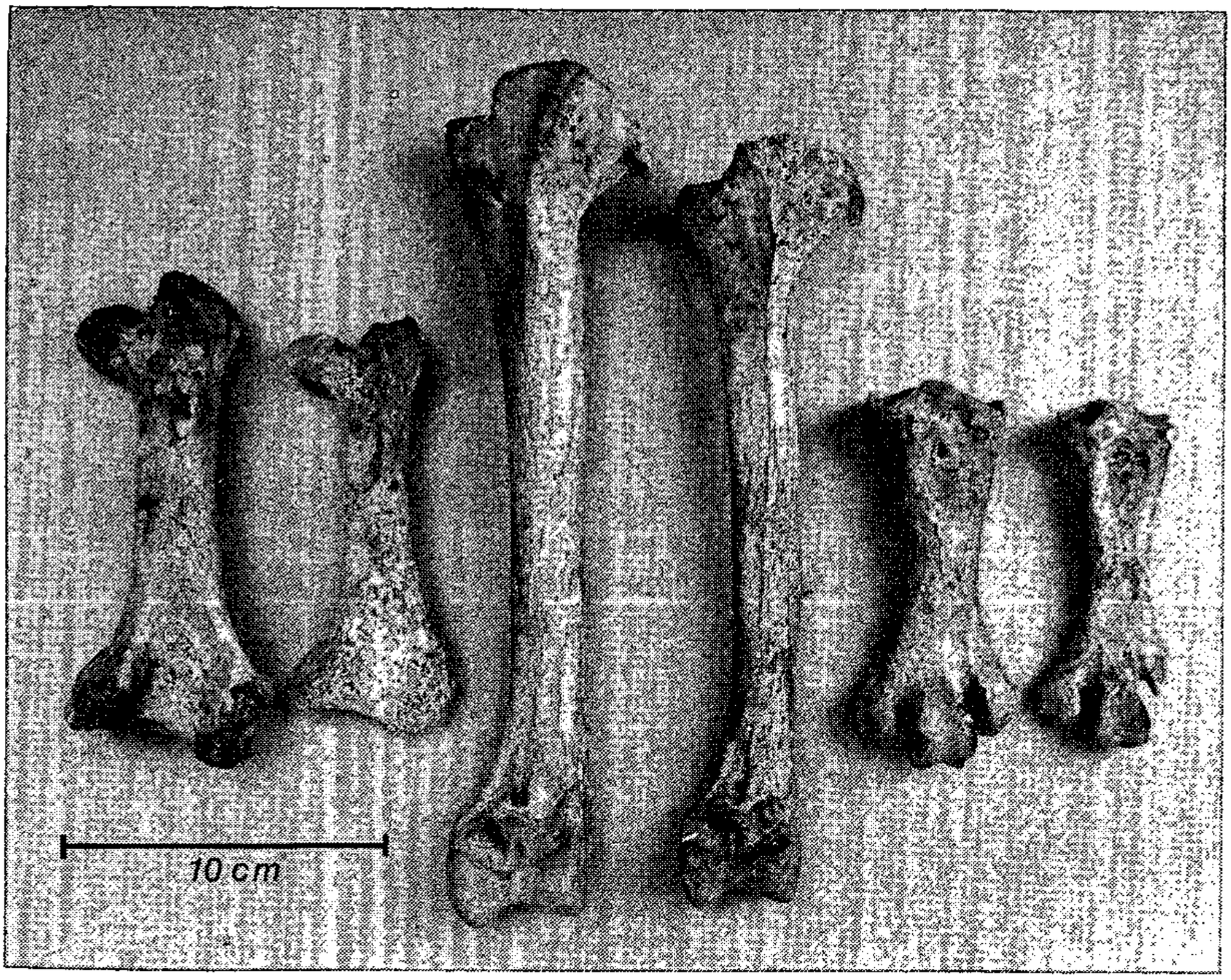

FIGURE 4 — **Pachyornis mappini**: femora, tibiotarsi, tarsometatarsi.
Left of each pair: AM 8.6/84 Cave M, Waikaremoana
Right of each pair: AM9.9/384 Pataua River, Whangarei
(Type of **Anomalopteryx oweni**)

of the type material and comparison of it with numerous examples of *Pachyornis* and *Anomalopteryx,* I believe resolve the dilemma.

The cranium, which most authors have chosen to show the diagnostic features of *Anomalopteryx,* has, as was noted by Haast (1886) in his type description, cranial sutures which are not fully fused, showing that it is from a subadult bird. Significantly, Haast (1886: 174) also noted that the cranium seemed disproportionately large for the rest of the skeleton. In contrast to the skull, the hind limb elements, which show all the essential features of *Pachyornis,* are without doubt from a fully mature individual as their epiphyses are completely fused to their shafts: again this was a feature noted but not further commented upon by Haast. Further, close examination of the skull and the post-cranial skeleton reveals that they differ noticeably in bone colour and texture, and that even traces of sediment adhering to them do not seem completely comparable.

Clearly, then, the skull (Figures 1-3) and the post-cranial skeleton (Figure 4) seem not to have come from the same individual, and indeed might not even be from the same site.

TABLE 1 — Lengths (mm) of legbones of **Anomalopteryx 'oweni'** and **Pachyornis mappini** (data from Archey 1941, Oliver 1949, Millener 1981). The suggested range for **mappini** was given in Millener (1981: 492).

	TYPE 'oweni' (AM 9.9/384)	Previously listed as 'oweni' [= mappini of this paper]	Previously listed as mappini or 'septentrionalis' [= mappini of Cracraft 1976]	Suggested range for mappini
Femur	143	135–163	139–224	135–c.230
Tibiotarsus	243	230–285	273–417	230–c.420
Tarsometatarsus	113	101–128	127–168	101–c.180

The type of *Anomalopteryx oweni* comprises a partial skeleton, of which the skull was the first element mentioned in the type description. As shown above, however, the type material is composite, and I have chosen the syntype skull as the lectotype of *oweni*. As this skull shows all the essential features of *A. didiformis* and indeed falls readily into the size range for that species, I propose that *A. oweni* be synonymised with *A. didiformis*, leaving the latter as the only species now recognised in the genus.

All the post-cranial elements appear to be from the one individual and on form and size can readily be assigned to *Pachyornis mappini* (see Table 1).

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