



PROCEEDINGS
OF THE
ROYAL SOCIETY OF VICTORIA

NEW SERIES
VOLUME 79
PART 1

ROYAL SOCIETY'S HALL
9 VICTORIA STREET, MELBOURNE, C.1

10 December 1965

NEW RECORD OF A FOSSIL PENGUIN IN AUSTRALIA

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Although not adequately identifiable, the specimen here discussed supplies a new locality record for fossil penguins in Australia and a new age record for fossil penguins in general. It was collected by Mr C. McCrae in 1965 and presented by him to the National Museum of Victoria. Mr Edmund D. Gill, Assistant Director of that museum, kindly sent it to me for study. Fig. 1 was drawn by Arnold Clapman, supported by National Science Foundation (U.S.A.) Grant No. GB-500.

SPHENISCIDAE

Gen. et sp. indet.

SPECIMEN: Nat. Mus. Vict. Reg. No. P.24065. Incomplete left coracoid.

LOCALITY: Beaumaris, Victoria.

HORIZON: Sandringham Sands, type Cheltenhamian of Singleton (1941), late Miocene according to Gill (1957). Although marine, these beds have also yielded a few scraps of land mammals (diprotodontids, see Stirton 1957).

The most readily identifiable penguin bones, as usually preserved in fossils, are the humerus and the tarsometatarsus. Most of the types of fossil species consist of one or the other of those bones, without others associated. Several specimens with associated parts, including coracoids, are known from New Zealand and there is one from Argentina but, in most instances, the reference of coracoids to species or genera is dubious. In New Zealand, coracoids have been referred to the extinct genera, *Palaeodyptes*, *Pachydyptes*, *Platydyptes*, and *Archaeospheniscus* by Marples (1952). Fossils from Seymour Is., S. of South America, but not, as often stated, Antarctic, include coracoids referred to *Eosphaeniscus*, *Anthropornis*, and perhaps *Notodyptes* (Wiman 1905, Marples 1953). Fossil coracoids from Argentine Patagonia are currently classified in *Paraptenodyptes*, *Palaeospheniscus*, *Paraspheniscus*, and *Arthrodyptes* (Moreno & Mercerat 1891, Ameghino 1905, Simpson 1946). Aside from the problem of dubious association or identification, most of the specimens of coracoids are fragmentary, and there are at least six extinct genera in which even fragments of coracoids have not been found or described.

The present specimen, lacking both ends and the medial crests or processes, has few really distinctive taxonomic characters. It does not agree exactly with any previously described fossil or with any recent species, and the difference is about as great as between some genera. The size is smaller than in known New Zealand and Seymour Is. fossil coracoids, and close to living *Pygoscelis adeliae* or a rather large fossil *Palaeospheniscus* from Patagonia. No standard measurement can be taken on the broken bone, but Fig. 1 is to scale.

The most distinctive morphological feature is that the supracoracoid foramen is either larger than in any other known instance, fossil or recent, or is absent as such, that is, is not bridged over by the supracoracoid. The latter condition, which is the more probable interpretation of the fossil, occurs in recent *Pygoscelis*,

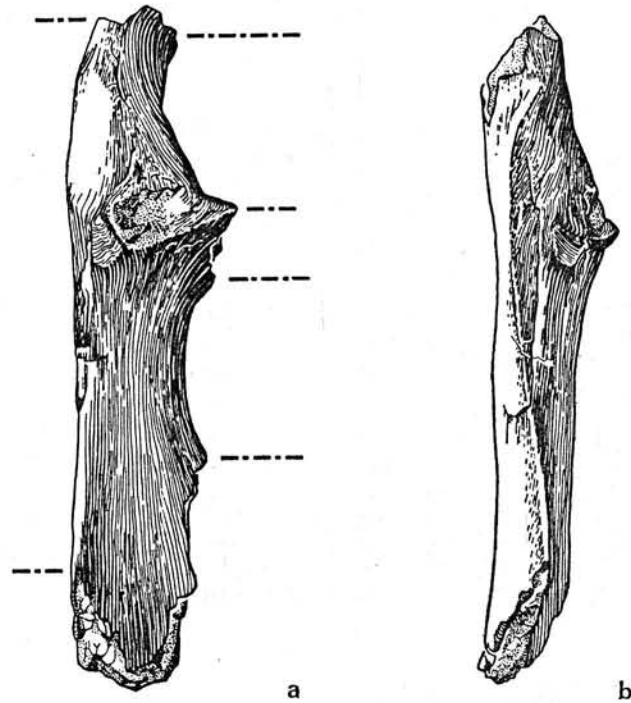


FIG. 1.—Spheniscidae, gen. et sp. indet. Nat. Mus. Vict. Reg. No. P.24065, incomplete left coracoid. A, dorsal view; dashed lines indicate ends of broken margins. B, lateral view. $\times 1$.

Eudyptula, and with some variability *Aptenodytes*. It is not surely known in any fossil, and it has been supposed (e.g. Marples 1952) that the supracoracoid bridging of the foramen was probably complete in known extinct penguins. However, in all but two instances, that is based on specimens in which the bridge, if any, is broken away so that its presence is not factually established. In any case, the medial margin in this region of the present specimen is quite different from that of any other known fossil penguin coracoid. As far as preserved, it is essentially similar to recent *Pygoscelis* and *Eudyptula*. In fact, pertinence to one or the other of those genera, although improbable, cannot be wholly excluded. The presence of a recent genus of birds in the late Miocene would not be too unusual. All other known fossil penguins clearly belong to extinct genera, but the youngest of them are older than the present specimen. No fossil penguin of just this age has previously been reported.

The known fossil penguins from Australia are now as follows:

Late Miocene, Cheltenhamian: Sandringham sands. Beaumaris, Victoria. Gen. et sp. indet. This paper.

Miocene, Balcombian: Glenelg group. Glenelg R., N. of Dartmoor, W. Victoria. *Anthropodytes gilli*. Gill 1959, Simpson 1959.

Oligocene: Gambier limestone. Near Mt Gambier, South Australia. Two markedly different, indeterminate species (relative levels within the Gambier limestone unknown). Glaessner 1955, Simpson 1957.

Late Eocene: Banded Marl member of Blanche Point marls. Port Noarlunga, S. of

Adelaide, South Australia. *Palaeodyptes* cf. *antarcticus*. Glaessner 1955, Simpson 1957.

Late Eocene: Transitional Marl member of Blanche Point marls (stratigraphically lower than Banded Marl member). Christie's Beach, S. of Adelaide, South Australia. *Palaeodyptes* cf. *antarcticus*. Finlayson 1938, Glaessner 1955, Simpson 1957.

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