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THE RELATIONSHIPS OF THE EXTINCT CHATHAM ISLAND EAGLE

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ABSTRACT

The extinct subfossil eagle of the Chatham Islands is referable to the genus *Haliaeetus* rather than to *Ichthyophaga* wherein originally described. *Haliaeetus australis,* as it should now be known, is more similar to northern species of the genus, particularly *H. pelagicus,* than to the geographically closer species *H. leucogaster,* and its ancestors probably colonised the Chatham Islands from the Northern Hemisphere rather than from Australasia.

INTRODUCTION

Subsequent to his rediscovery (Dawson 1958) of the material of subfossil birds upon which H. O. Forbes had named several new species from New Zealand and the Chatham Islands, Dawson (1961) called attention to bones of an extinct sea-eagle from Holocene deposits in the Chatham Islands in the collections of the British Museum (Natural History). Although he refrained from naming this eagle, Dawson (1961) concluded that it was referable to the genus *Haliaeetus* but was not closely related to the Australasian species *H. leucogaster,* which geographically is the nearest representative of the genus.

In formally describing the Chatham Island eagle as a new species, *Ichthyophaga australis,* Harrison & Walker (1973) dwelt upon a single, very dubious character of the tarsometatarsus in attempting to show that this species belonged in the genus *Ichthyophaga* rather than *Haliaeetus.* In so doing, they overlooked the major points of difference between the tarsometatarsi of these two genera — differences that indicate beyond question that Dawson (1961) was initially correct on all counts.

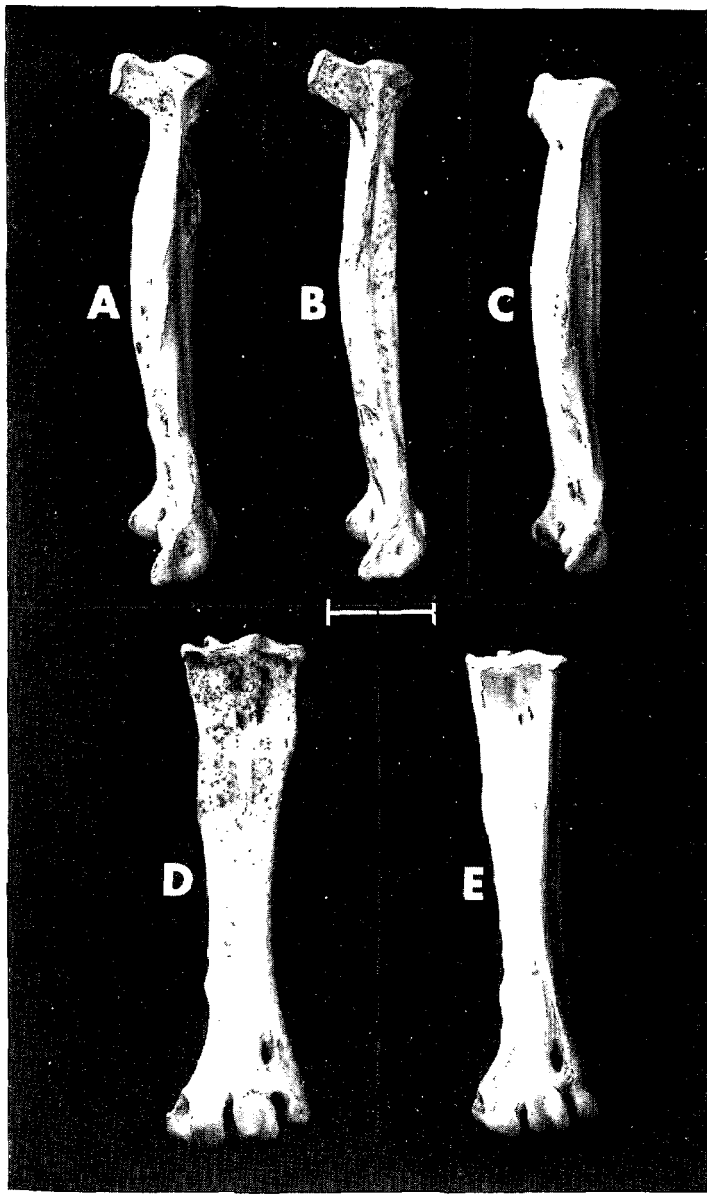

FIGURE 1 — Left tarsometatarsi of **Haliaeetus** and **Ichthyophaga** in medial (A-C) and anterior (D-E) views. (A) **H. pelagicus** (USNM 226265); (B, D) **H. australis** (BMNH A3729); (C, E) **I. ichthyaetus** (USNM 468555). Scale ≈ 2 cm.

The original material of *"Ichthyophaga" australis* consisted of three tarsometatarsi, two pelves, and a scapula, of which I was able to study a paratypical tarsometatarsus (BMNH A3729) and a pelvis (BMNH A3732). Comparative material examined included complete skeletons of 3 *Haliaeetus pelagicus,* 3 *H. albicilla,* 5 *H. leucogaster,* 1 *H. vocifer,* numerous *H. leucocephala,* 1 *Ichthyophaga ichthyaetus,* and 1 *I. nana.*

GENERIC AFFINITIES

Harrison & Walker (1973: 274) considered the Chatham eagle to be referable to *Ichthyophaga* " because of the position of the outer proximal foramen " but they did not make clear just what they intended by this, their " diagnosis " being rather muddled by uncertainty as to what they meant by " external " and " anterior." I can see no significant difference in the placement of the outer (=lateral) proximal foramen between *Ichthyophaga* and *Haliaeetus.* The position of the inner (medial) foramen is quite variable between and within species of these eagles, which would indicate that these foramina are probably not of much use for identification. Although *Ichthyophaga* and *Haliaeetus* are fairly closely related (Olson 1982), the overall structure of their tarsometatarsi is so different (Fig. 1) that confusion between the two could seemingly have arisen only by peering intently at a small hole while ignoring the bone that surrounded it.

The tarsometatarsus of *Ichthyophaga* differs from that of *Haliaeetus* in the following characters: (1) in lateral or medial view the medial calcaneal ridge of the hypotarsus is not nearly as produced plantad and (2) slopes much more gradually to the shaft distally, while in plantar view it is (3) distinctly longer; (4) the lateral surface of the shaft is much wider and flatter, even being slightly excavated, and (5) does not narrow as much proximally; (6) the outer trochlea, in lateral view, is much less elongated; (7) the wing of the inner trochlea is less distinct and (8) angled less plantad; (9) the middle trochlea is much shorter proximo-distally and (10) not as deep when viewed distally; (11) the two ridges of the middle trochlea are of equal distal extent whereas in *Haliaeetus* the lateral ridge extends noticeably farther distally; (12) the anterior surface of the shaft is much more excavated, producing a much sharper lateral ridge with (13) a deep excavation between this ridge and the scar for M. tibialis anticus; (14) the distal foramen is markedly larger; (15) in proximal view the medial cotyla is not as distinctly offset from the medial calcaneal ridge as in *Haliaeetus.* In all of these respects the Chatham Island eagle clearly agrees with *Haliaeetus.* Therefore the species should now be known as

Haliaeetus australis, comb. nov.

RELATIONSHIPS WITHIN *Haliaeetus*

The nearest living species of *Haliaeetus* to the Chatham Islands is *H. leucogaster,* the White-bellied Sea Eagle, which ranges from India

through southeast Asia, Indonesia, and Australia. It would be reasonable enough to assume that the ancestor of *H. australis* arrived in the Chatham Islands from Australasia, although the absence of any resident species of *Haliaeetus* in New Zealand, living or fossil, would be a bit puzzling if this were the case. Geography notwithstanding, the morphology of the tarsometatarsus precludes *H. leucogaster* being involved in the ancestry of *H. australis.*

The tarsometatarsus of *H. leucogaster* differs from that of *H. australis* as follows: although about the same length, the bone is (1) much more slender; (2) the medial calcaneal ridge of the hypotarsus is much more slender; (3) the scar for M. tibialis anticus is shorter, more prominent, and more laterally situated; and (4) the medial cotyla in proximal view is much more rounded and does not project as far medially. *Haliaeetus sanfordi* of the Solomon Islands has been assumed to be closely related to *H. leucogaster* (Brown & Amadon 1968). If this is the case, it can likewise be ruled out as a close relative of *H. australis.*

The closest resemblance of *H. australis* is to the northern sea-eagles such as *H. albicilla,* the White-tailed Sea Eagle, of Eurasia, and particularly *H. pelagicus,* Steller's Sea Eagle, of the coastal regions of northeast Asia. The length of the longest of the three known tarsometatarsi of *H. australis* (BMNH A3729; 97.4 mm) is within the size range of both of these species. The measurement given for this specimen by Harrison & Walker (101.5) appears to be inaccurate because, even if measured from the proximal end of the hypotarsus (rather than from the intercotylar prominence, as I have done), their measurement would be 2 mm too long. The other two specimens of *H. australis* were evidently markedly shorter than the one I examined, however long they may actually have been. The length of the synsacrum of *H. australis* that I examined was 113.7 mm, which is within the range of *H. pelagicus* but larger than in three specimens of *H. albicilla* (of which one was a particularly large individual of the Greenland race). The tarsometatarsus in *H. australis* is more robustly built than in individuals of *H. albicilla* of comparable size and its overall similarity is greatest to that of *H. pelagicus.* It would be very difficult to find any consistent difference between the paratype of *H. australis* that I examined and the small series of tarsometatarsi of *H. pelagicus* available to me, apart from the former being slightly less robust.

The best distinguishing character of *H. australis* that I found is the much wider median ridge between the anterior iliac shields of the pelvis, in which respect the Chatham eagle differs from other species of *Haliaeetus* examined. This character permits the continued recognition of *Haliaeetus australis* as a distinct species.

Thus it would appear that *Haliaeetus australis* could be added to the small number of species of birds that evidently established themselves in the New Zealand region by chance colonisations from

the Northern Hemisphere. Other examples are the so-called Auckland Islands Merganser *(Mergus australis)*, which is now known from subfossil material from the main islands of New Zealand as well as from the Auckland Islands (Kear & Scarlett 1970, Millener 1981), the New Zealand Scaup *(Aythya novaeseelandiae)*, and the Black-billed Gull *(Larus bulleri)*. *Mergus australis* has its closest relative in *Mergus squamatus* of China (Kear & Scarlett 1970), *Aythya novae-seelandiae* is related to the Palearctic Tufted Duck *(A. fuligula)* and the Holarctic true scaups *(A. marila* and *A. affinis)* (Johnsgard 1965), and *Larus bulleri* is more closely related to the Northern Hemisphere *L. ridibundus* group than to any of the gulls of the Southern Hemisphere (Falla 1953).

The above examples notwithstanding, the seemingly isolated position of *Haliaeetus australis* in the Chathams might also be an artifact of relatively recent man-caused extinctions. An extinct species of *Haliaeetus*, different from *H. australis*, is now known from Holocene deposits in the Hawaiian Islands and is believed to have been exterminated since the arrival of man in the archipelago (Olson & James 1982). If this and *H. australis*, which are the only populations of *Haliaeetus* in the Pacific yet known from east of the Solomons, were both exterminated prehistorically by man or man-caused changes in environment, it may well be that eagles of the genus *Haliaeetus* were once much more widespread in the islands of the Pacific and may be expected in fossil deposits from other islands.

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