

Fossil Birds from
Late Quaternary Deposits
in New Caledonia

Jean Christophe Balouet and Storrs L. Olson



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Genus *Halcyon* Swainson, 1821

***Halcyon sancta* Vigors and Horsfield, 1827**

MATERIAL.—Gilles Cave, upper layer: 2 right humeri.

MEASUREMENT (mm).—Humerus: length, 29.3.

COMPARATIVE MATERIAL.—*Halcyon sancta*, 14 USNM.

STATUS.—Extant, endemic subspecies of widespread species; fairly common in open country, scarcer in forests.

Genus *Tyto* Billberg, 1828

The following new species most closely resembles *Tyto* as opposed to the Strigidae in the following characters. Femur: absence of a deeply excavated popliteal fossa that sharply delimits the posterolateral border of the inner condyle; head proportionately small. Coracoid: pneumatic foramina on the head absent; procoracoid process expanded; dorsomedial sternal facet more strongly projecting dorsally, but short, extending only half the width of sternal end. The fossil form shows no similarity to *Phodilus* (which has a much larger head of the femur and a strangely reduced acrocoracoid area) except in the wide rotular groove. Although clearly referable to the Tytonidae, as opposed to the Strigidae, this species is so

different from the species of *Tyto* for which skeletons are available, that it might eventually be placed in another genus. Comparison is desired with *Tyto tenebricosa* (Gould), a highly distinctive species of Australia and New Guinea, but unfortunately no skeletons of it have been preserved.

***Tyto? letocarti*, new species**

FIGURE 8A,B,D

Tyto letocarti Balouet, 1987:178 [nomen nudum].

HOLOTYPE.—Complete adult left femur, NCG 1000, Institut de Paléontologie, Muséum National d'Histoire Naturelle, Paris (Figure 8A,B).

TYPE LOCALITY.—Lower layer (antedating the arrival of man and *Rattus*) of the deposits at Gilles Cave, 5 km WSW of Boulouparis, west coast of New Caledonia. 21°53' 23"S, 166°00' 15"E.

MEASUREMENTS OF HOLOTYPE.—See Table 8.

PARATYPES.—Gilles Cave, lower layers: 2 thoracic vertebrae (NCG 1001, 1002); left coracoid, with sternocoracoidal process broken (NCG 1003); left scapula with end of blade and acromion missing (NCG 1004); shaft of left humerus (NCG

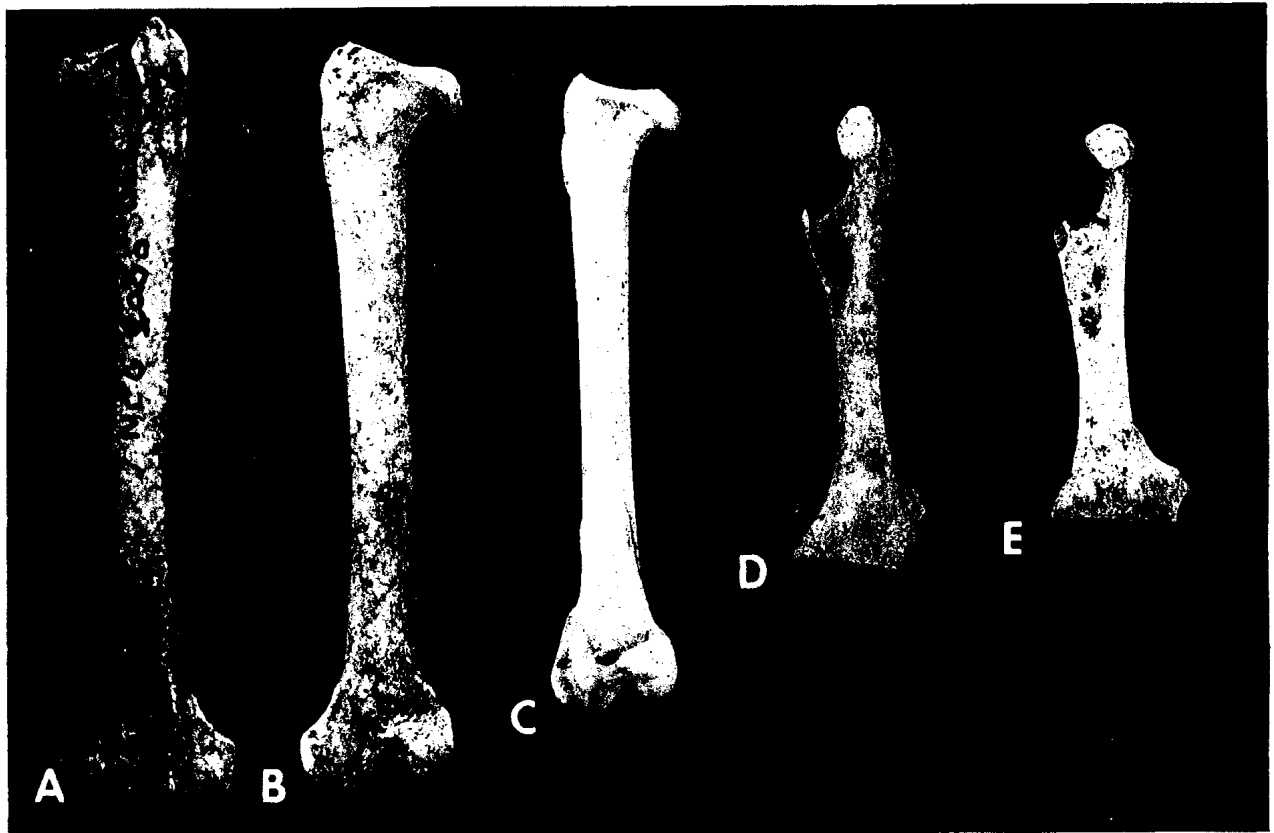


FIGURE 8.—*Tyto? letocarti*, new species (A,B: holotype, NCG 1000; D: NCG 1003), compared with bones of *T. alba* from the upper layer of Gilles Cave (C,E). Femur: A, anterior view; B,C, posterior view. Coracoid: D,E, ventral view. (B–E, $\times 1.5$; A somewhat larger.)

TABLE 8.—Measurements (mm) of *Tyto? letocarti*, new species, compared with other species of *Tyto*.

Character	<i>T.? letocarti</i> ¹	<i>T. alba</i> (n = 11)		<i>T. longimembris</i> (n = 2)		<i>T. novaehollandiae</i> (n = 2)	
		range	mean	range	mean	range	mean
SCAPULA							
Proximal width	8.0	7.2–8.4	7.6	10.6, 11.0	10.8	9.6, 11.4	10.5
CORACOID							
Length	38.5	32.0–33.8	33.1	39.8, 40.2	40.0	39.4, 43.4	41.4
Width of shaft at midpoint	4.0	4.2–4.6	4.3	5.1, 5.2	5.2	4.9, 5.0	5.0
Depth of shaft at midpoint	2.4	2.1–2.7	2.3	2.7, 2.9	2.8	3.0, 3.6	3.3
FEMUR							
Length	62.6	49.1–53.9	51.4	60.3, 62.5	61.4	61.8, 67.1	64.4
Proximal width	12.0	8.9–10.7	9.9	10.5, 11.0	10.8	12.0, 13.7	12.8
Proximal depth	7.5	5.5–6.3	6.0	6.8, 8.0	7.3	7.1, 9.1	8.1
Shaft width at midpoint	5.3	3.5–4.2	3.9	4.3, 4.5	4.4	5.4, 6.5	6.0
Distal width	12.9	9.5–10.9	10.4	11.1, 12.2	11.6	12.5, 14.2	13.4
Depth inner condyle	8.9	6.5–7.2	6.9	7.7, 8.3	8.0	8.7, 10.1	9.4
Depth outer condyle	10.5	7.8–9.0	8.3	10.3, 10.7	10.5	11.0, 12.5	11.8

¹*T.? letocarti* measurements of femur from NCG 1000 (holotype).

1005); distal half of juvenile left femur (NCG 1006).

MEASUREMENTS OF PARATYPES (mm).—Coracoid: length with sternal end flat on calipers, 38.5; width and depth of shaft at midpoint, 4.0 × 2.4. Scapula: proximal width, 8.1. Humerus: width and depth of shaft at approximate midpoint, 5.4 × 4.6. (See also Table 8.)

COMPARATIVE MATERIAL.—*Tyto alba* (Scopoli), many from North America, 2 Africa, 2 Thailand, 1 Fiji, 1 Australia, all USNM; *T. glaucops* (Kaup), 3 USNM; *T. novaehollandiae* (Stevens), 2 NMV, 2 partial SAM; *T. longimembris* (Jerdon), 1 MVZ, 1 + 1 partial SAM; *Phodilus badius* (Horsfield), 1 USNM.

DIAGNOSIS.—Femur similar in size to that of *Tyto longimembris* but head smaller, shaft somewhat more robust, rotular groove very much wider, the ridges of the condyles not extending as far proximally, distal end more expanded. The coracoid is proportionately smaller and the shaft is much more slender. The furcular facet is much more pronounced and rotated more ventrally. The scapula has the blade straighter and narrower, with the proximal end much narrower as well.

ETYMOLOGY.—Named after Yves Letocart of the Water and Forest Service in Nouméa, who has been very active in the preservation of New Caledonian birds and who took part in prospecting for and collecting fossil birds.

STATUS.—Extinct, endemic; known from fossils only.

REMARKS.—The six bones recovered in the lower layers of Gilles Cave belong to one juvenile individual and probably only one adult individual, as all the bones were recovered very close to one another, in association with abundant lizard bones

(Gekkonidae and Scincidae), and bones of *Sylviornis neocaledoniae*, *Turnix varia*, *Aegotheles savesi*, and *Tricholimnas lafresnayanus*.

Tyto alba (Scopoli, 1769)

MATERIAL.—Pindai Cave: right tarsometatarsus, left carpometacarpus, 2 coracoids (juvenile).

Gilles Cave, upper layer: 2 crania, quadrate, premaxilla, sternum, 5 scapulae, furcula, 13 coracoids, 20 humeri, 16 ulna, 5 radii, 5 metacarpi, 2 carpometacarpi, 34 femora, 24 tibiotarsi, 24 tarsometatarsi.

MEASUREMENTS (mm).—Pindai: length of tarsometatarsus, 62.2; length of carpometacarpus, 44.6.

Gilles (measurements are means): cranium width, 36.9; quadrate height, 10.3; premaxilla length, 26.4; length of keel of sternum, 30.5; length of furcula, 35.3; length of scapula, 40.9; length of coracoid, 35.0; length of humerus, 86.3; length of ulna, 97.8; length of carpometacarpus, 44.7; length of pelvis, 54.3; length of femur, 52.0; length of tibiotarsus, 92.3; length of tarsometatarsus, 62.7.

COMPARATIVE MATERIAL.—See *Tyto? letocarti*, new species.

STATUS.—Extant, cosmopolitan species; common.

REMARKS.—These birds are responsible for the accumulation of most of the vertebrate remains in the upper layer at Gilles Cave. Although birds from New Caledonia and the Loyalty Islands were once stated by Mayr (1936) not to differ from the Polynesian form *T. a. lulu* (Peale), he later (Mayr,