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The bats of Aldabra Atoll, western Indian Ocean

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The known bat fauna of Aldabra is discussed, with notes on specimens obtained by the Royal Society Expedition. Malagasy *Pteropus* of the *rufus* group are reviewed and a reduction in the number of species recognized in the group from six to four is proposed. Specimens of *Taphozous mauritanus* and *Tadarida pusilla* are reported from Aldabra, the latter known hitherto apparently only from the type and one other specimen.

INTRODUCTION

So far as is known, the indigenous mammals of Aldabra are limited to four species of bat, none hitherto common in collections. Three species were encountered by Dr W. L. Abbott when visiting the atoll in 1893, two being described as new from specimens obtained by this collector. The third remained unidentified until the visit of J. C. F. Fryer in 1908–9, who recorded a fourth species. Bats collected by various members of the Royal Society Expedition include examples of three of the recorded species.

SYSTEMATIC SECTION

Pteropus seychellensis aldabrensis True, 1893

2♂♂, 2♀♀. 30–31 January 1968. Settlement, West Island (Picard)

4♂♂ (1 imm.). 12–14 February 1968. Takamaka Grove, South Island

First obtained by Dr W. L. Abbott in 1893, the Aldabra fruit bat has hitherto been represented in collections by few specimens, Andersen (1912, p. 214) recording no more than those collected by Abbott together with a skull found in 1895 by Dr A. Voeltzkow in the house on Aldabra formerly occupied by this collector. Subsequently, J. C. F. Fryer obtained further specimens of which four are now in the University Museum, Cambridge, and two (B.M. 13.2.18.3–4) in the collections of the British Museum (Natural History).

Nine species of *Pteropus*, all but one monotypic, are currently listed from the Malagasy region. The genus is unknown from continental Africa, although one form (*comorensis*) occurs on Mafia Island, 16 km from the mainland, and another (*voeltzkowi*) on Pemba Island, some 50 km offshore. The current classification dates from Andersen (1912), who recognized the presence in the region of four species groups, all Indo-Malayan or Austro-Malayan in affinity, and, excepting one, not predominantly of Malagasy distribution. According to Andersen, the *rufus* group, to which he refers *aldabrensis*, is exclusive to the region and includes all but three of the total of ten named forms from Madagascar and the surrounding islands. This group has an evidently close affinity with the *melanotus* group of Andersen, which contains five named forms (monographed by Andersen as distinct species but nowadays all considered conspecific) distributed from the Andaman Islands through the Nicobar Islands and the islands of Nias and Engano to Christmas Island, south of Java.

There seems no valid reason for the retention of six of the seven named forms in the *rufus* group of Andersen (in fact *niger* is the earliest name in the group) as distinct species. Andersen recognized two distinct types within the group, a Mascarene type represented solely by *niger* (Mauritius and Réunion), with a Malagasy type including *rufus* and *princeps* (Madagascar), *comorensis* (Comoro Islands), *seychellensis* (Seychelle Islands), *aldabrensis* and *voeltzkowi* (Pemba Island). An examination of the members of the group suggests that at most four species can be maintained.

Pteropus niger Kerr, 1792

Sharply differentiated from the remaining named forms in the group: quite apart from very small ears and thickly haired tibiae which contrast with the larger ears and naked or thinly haired tibiae in the other members of the group, *niger* is characterized by its unique dorsal coloration of glossy, blackish brown mantle, tinged with rufous, which extends posteriorly into a dark brown median spinal tract, flanked by buff lateral patches. Mauritius and Réunion.

Pteropus rufus E. Geoffroy, 1803

Large (length of forearm 158–171 mm), with large ears (length of ear 34–41 mm), ochraceous or pale orange mantle, brownish back with few paler brown or greyish hairs, and yellowish buff underparts, the hairs dark brown for most of their length and tipped with the brighter colour. The species is confined to Madagascar, whence two subspecies have been recognized.

P. r. rufus E. Geoffroy, 1803

Generally smaller (forearm 158–165 mm); northern and central Madagascar.

P. r. princeps Andersen, 1908

Generally larger (forearm to 171 mm); southern Madagascar.

Pteropus seychellensis Milne Edwards, 1877

Smaller (forearm 130–157 mm) than *P. rufus*, with smaller ears (30–35 mm) generally similar to that species, but the back sprinkled to a greater or lesser extent with greyish hairs. Underparts yellowish buff, ochraceous or pale orange, the hairs as in *P. rufus*, dark brown for most of their length but brightly tipped. Three subspecies can be defined:

P. s. seychellensis Milne Edwards, 1877

Forearm 143–154 mm, ear 30–35 mm, back and rump conspicuously sprinkled with silvery grey hairs, underparts tinged with orange. Seychelle Islands.

P. s. aldabrensis True, 1893

Smaller than *P. s. seychellensis* (forearm 130–141 mm) with ears of similar size, paler brown on the back which is heavily sprinkled with silvery grey as in that subspecies, underparts yellowish buff or ochraceous. Aldabra Island.

P. s. comorensis Nicoll, 1908

Slightly larger than *P. s. seychellensis* (forearm 151–157 mm) with ears of similar size, back blackish brown with few silver grey hairs, underparts yellowish buff or ochraceous. Comoro Islands; Mafia Island.

Pteropus voeltzkowi Matschie, 1909

Smaller than *P. rufus* (forearm 151–161 mm) with relatively smaller ears than in that species or in *P. seychellensis* (ear 20–30 mm); bright orange-red mantle and underparts, the back brownish with few silver grey hairs, but with the ventral pelage brightly coloured almost to the base of the hairs, their dark bases being much reduced. Pemba Island.

No representative of either the *rufus* group or the *melanotus* group has been reported from the Maldivé or Laccadive Islands, the members of the two groups otherwise being distributed through the island chains surrounding the Indian Ocean. Although resembling the *rufus* group in many features, the single species *P. melanotus* is characterized by a tendency among its subspecies towards the suppression of the yellow or orange of the mantle and underparts, and of the brown of the back, these colours being replaced by black.

Coleura seychellensis Peters, 1896

The genus *Coleura* has never been recorded from Aldabra, although *C. s. seychellensis* and *C. s. silhouettae* Thomas, 1915 (Silhouette Island) occur on the nearby islands of the Seychelles.

Taphozous mauritianus E. Geoffroy, 1818

2♂♂. 5 and 17 June 1968. Settlement, West Island (Picard)

Fryer (1911, p. 417) recorded *T. mauritianus* from sight records on Aldabra: these appear to be the first specimens to be collected. Extensively distributed on the African mainland, the species is also known from Madagascar, Mauritius, Réunion and Assumption Island, whence it was recorded by Scott (1914, p. 163), from a specimen obtained by Fryer.

Triaenops furculus Trouessart, 1906

First described from Madagascar, *T. furculus* was recorded from Aldabra by Fryer (1911, p. 417), who sent a specimen to Trouessart for identification. Two further specimens obtained by Fryer on the small island of Cosmoledo, near Aldabra, are now in the collections of the British Museum (Natural History) (B.M. 13.2.18.1–2). Tate (1941, p. 3) lists '*Triaenops furinea* Trouessart' from 'Aldabra Islands'. Trouessart seems never to have described a species of this name, which apparently results from a misreading of *furcula*.

Tadarida pusilla Miller, 1902

1♂. 4 October 1966. East shore of east channel (Passe Houareau), South Island.

1♂, 4♀♀. 12–14 February 1968. 2♀♀. 6 and 13 June 1968. Takamaka Grove, South Island.

1♂. 7 June 1968. Settlement, West Island (Picard).

True (in Abbott 1894, p. 762, footnote) recorded *Tadarida pumila* from Aldabra, the specimens obtained by Dr W. L. Abbott becoming subsequently the basis of *Nyctinomus pusillus* Miller. Those collected during recent visits to Aldabra agree closely with the original description, differing from the mainland *T. pumila* chiefly in their very much smaller, less massive skulls and smaller teeth. A single specimen (B.M. 28.1.24.4) in the collection of the British Museum (Natural History) from the Amirante Islands, northeast of Aldabra, agrees closely with specimens from that island and must be referred to *T. pusilla*, which is clearly closely related to *T. pumila* and with which it may prove conspecific.

Measurements (number of specimens, range, arithmetical mean, in millimetres) of specimens from Aldabra: length of forearm (9) 37.4–38.6 (38.1); greatest length of skull (4) 14.8–15.7 (15.2); condylobasal length (3) 13.9–14.9 (14.3); basal length (2) 12.4–12.6; basilar length (2) 11.8–12.1; lachrymal width (4) 4.7–5.3 (5.1); interorbital width (4) 3.0–3.1 (3.1); zygomatic width (4) 8.8–9.3 (9.0); width of braincase (4) 7.5–7.9 (7.7); mastoid width (4) 8.5–9.1 (8.7); m^3 – m^3 (4) 6.1–6.7 (6.5); c – m^3 (4) 5.4–5.6 (5.5); length of mandible (2) 9.1–9.6; c – m_3 5.8–6.1 (5.9).

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