

***Pseudantechinus mimulus* (Thomas, 1906)
(Marsupialia, Dasyuridae): rediscovery and redescription.**

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Abstract

Before the collection in 1967 of three specimens of *Pseudantechinus mimulus* from North I., Sir Edward Pellew Group, Northern Territory (c. 15°37'S, 136°53'E), the species was known only from the holotype collected 62 years earlier from Alexandria (c. 19°S, 137°E), approximately 300 km to the south of the Pellew Group. This paper redescribes *P. mimulus* and diagnoses it against other *Pseudantechinus* spp.

Introduction

In September 1988, Dr John Calaby, CSIRO, Division of Wildlife and Ecology, Canberra, forwarded to me three specimens of *Pseudantechinus* from North I., N.T., which differed from the forms of *Pseudantechinus* currently recognised: *P. ningbing* Kitchener, 1988; *P. bilarni* (Johnson, 1954); *P. macdonnellensis* (Spencer, 1896) and *P. woolleyae* Kitchener and Caputi, 1988.

These specimens from North I. closely accorded in skull, dental and external measurements and pelage colouration to the type description of *Phascogale mimulus* by Thomas (1906: 541-2) and to the additional notes on the holotype of *P. mimulus* by Tate (1947: 139) who recognised this form as a *Pseudantechinus* species. While most recent authors (e.g. Mahoney and Ride 1988) synonymise *Phascogale mimulus* with *P. macdonnellensis* (which they place in the genus *Parantechinus*), Kitchener and Caputi (1988: 46) indicated doubt on that taxonomic placement.

Regrettably, I am unable to directly compare the North I. *Pseudantechinus* specimens with the only other known specimen, the holotype, which is at the British Museum (Natural History) and is not available for loan. Fortunately, Mr Laurie Smith, Western Australian Museum, kindly compared one of these specimens (CM 3921) with the holotype and Ms Paula Jenkins, British Museum (Natural History) also kindly examined aspects of the skull of the holotype for me, and made available to me photographs of the skull for study.

Materials and methods

Measurements (all in mm)

Description of morphology follows Archer (1981). Tooth number follows Archer (1978). Cranial and external points used for measurements also follow Archer (1981) with the exception of three additional measurements, asterisked (*) below. Nineteen measurements of skull and dental characters, four of external body characters (in mm)

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and weight (in gms) were recorded from adult specimens and in the Description sections. Abbreviation for these measurements are as follows: MAXL, maximum skull length; BASCRANL, basicranial length; MSKH, maximum skull height; MSKW, width across zygoma; OBUL, outside bullae distance; INBUL, inside bullae distance; BULTOT*, length of tympanic wing of alisphenoid and periotic, from posterior lacerate foramen to anterior edge of alisphenoid wing; BULPER*, length of periotic tympanic wing from lacerate foramen to contact point with alisphenoid tympanic wing, measured in the same line as for BULTOT; C¹-M⁵, M²-M⁵, I₁-M₅, M₂-M₅ crown lengths; RM⁴-LM⁴, width outside crowns; INORB, minimum interorbital width; MAXVAC*, maximum length of maxillary palatal vacuity; NASL, nasal length; DC-I₁ *dentary condyle to I₁*; ANGCON, tip of angular process to articular condyle; CONRAM, articular condyle to anterior border of ascending ramus; NV, tip of rhinarium to vent length; TV, tail tip to vent length; HF, hind foot length; EAR, ear height from notch; WT, weight.

Pelage and skin

Colour of pelage, when capitalised, follows Ridgway (1912). Specimens were regarded as adult if M⁵ and P₃ were fully erupted and basicranial sutures fully ossified. Only adults were included in the statistical comparison.

Taxonomy

Pseudantechinus mimulus (Thomas, 1906)

Table 1, Figures 1-4

Phascogale mimulus Thomas, 1906, Proc. Zool. Soc. Lond. 2: 536-43.

Holotype

British Museum Number (BM) 6.3.9.75, adult female, from near Alexandria (19°03'S, 136°42'E), Northern Territory, collected by Mr W. Stalker in 1905.

Diagnosis

Distinguished from other *Pseudantechinus* spp. by having a combination of: squamosal and frontal sutures of lateral cranium not in contact or close, P₃ more than 1/2 occlusal surface area of P₂, tail subequal to vent length and M² styler cusp B low, fused with parastyle.

Pseudantechinus mimulus differs from *P. ningbing* in averaging smaller in skull, dental and external characters and having shorter: nasal (NASL) 8.9 (8.7-9.0) v. 10.2 (9.5-11.2) and I₁-M₅ 11.0 (10.9-11.1) v. 12.2 (11.6-13.0); bulla length (BULTOT) shorter relative to maximum skull length; outside bulla length (OBUL) also shorter relative to MAXL (Figure 3); periotic tympanic wing larger compared to alisphenoid tympanic wing — periotic slightly more inflated, alisphenoid less inflated; small spike on lateral surface of alisphenoid tympanic bulla immediately anterior to postglenoid process present rather than usually absent or occasionally rudimentary; P₃ larger relative to P₂ usually 1/2 to 3/4 rather than <1/2 occlusal surface area of P₂; squamosal and frontal sutures of lateral cranium not close rather than usually in contact or close; tail more heavily furred.

Table 1: Measurements of *Pseudantechinus mimulus* holotype (externals from 'spirit') and specimens from North I. (externals when recently dead). Mean and range of measurements for other *Pseudantechinus* species are from Kitchener and Caputi (1988: Table 2). Explanation of character codes in Methods.

MUSEUM NUMBER	BM	North Island				<i>P. ningbing</i>	<i>P. bilarni</i>	<i>P. macdonnellensis</i>	<i>P. woolleyae</i>
		CM	CM	CM	CM				
SEX	♀	3921	2697	2894					
SKULL AND DENTARY CHARACTERS		♂	♂	♀					
MAXL	24.7	24.8	25.5	25.4	27.1 (25.5-29.1)	28.3 (26.3-30.5)	27.5 (25.9-29.7)	29.9 (28.0-31.2)	
BASCRANL	22	22.8	23.3	23.3	24.9 (23.3-27.1)	26.0 (24.0-28.2)	25.3 (23.4-27.0)	27.5 (25.6-28.7)	
MSKH	5.6	6.3	6.6	6.4	6.7 (6.3- 7.1)	7.0 (6.4- 7.4)	6.7 (6.2- 7.2)	7.1 (6.8- 7.4)	
MSKW	14.6	14.7	15.8	15.0	15.6 (14.6-17.0)	16.6 (15.0-18.4)	15.9 (14.9-17.0)	17.2 (15.9-18.7)	
BULPER	2.0+	2.6	3.2	3.1	3.0 (2.5- 3.5)	2.7 (2.3- 2.9)	3.1 (2.7- 3.5)	3.8 (3.3- 4.3)	
BULTOT	5.8	5.3	5.9	5.5	5.9 (5.5- 6.5)	5.9 (5.5- 6.3)	6.5 (6.0- 7.0)	7.6 (7.1- 8.2)	
OBUL		10.8	11.6	11.0	11.1 (10.5-11.9)	11.6 (10.7-12.5)	11.6 (10.8-12.3)	12.9 (12.4-13.4)	
INBUL		3.2	3.2	3.4	3.1 (2.8- 3.8)	3.5 (3.2- 3.9)	2.9 (2.1- 3.4)	2.8 (2.4- 3.3)	
C ¹ -M ⁵		9.5	9.6	9.7	10.2 (9.0-10.9)	10.7 (10.0-11.4)	10.2 (9.3-10.7)	11.3 (10.8-11.6)	
M ² -M ⁵		6.1	6.2	6.3	6.2 (5.8- 6.8)	6.5 (6.1- 7.2)	6.4 (5.8- 6.8)	6.7 (6.3- 7.1)	
RM ⁴ -LM ⁴	8.8	8.6	8.6	8.6	8.7 (8.2- 9.4)	9.1 (8.0- 9.7)	8.8 (8.3- 9.3)	9.6 (9.1-10.3)	
INORB	5.3	5.1	5.2	5.3	5.5 (5.0- 6.2)	5.8 (5.4- 6.2)	5.2 (4.6- 5.7)	5.9 (5.5- 6.2)	
MAXVAC		3.2	3.5	3.4	3.6 (2.4- 4.3)	2.8 (2.2- 3.8)	3.8 (2.8- 4.4)	3.9 (2.9- 4.7)	
NASL	9	8.7	9.0	8.9	10.2 (9.5-11.2)	10.6 (9.3-11.6)	10.1 (8.6-11.4)	10.8 (9.0-11.4)	
DC-I ₁	18.0	18.9	18.6	19.6	19.6 (18.5-21.5)	20.6 (19.1-22.4)	20.1 (18.8-21.4)	21.7 (19.9-22.8)	
I ₁ -M ₅		11.0	11.1	10.9	12.2 (11.6-13.0)	12.8 (11.6-13.6)	12.2 (10.4-12.9)	13.4 (12.6-13.9)	
M ₂ -M ₅		6.8	6.8	6.9	7.0 (6.3- 7.4)	7.2 (6.8- 7.4)	7.2 (6.5- 7.6)	7.5 (6.9- 8.0)	
ANGCON	4.9	5.4	5.0	5.1	5.1 (4.5- 6.0)	5.1 (4.0- 5.7)	5.4 (4.8- 5.8)	6.1 (5.6- 6.5)	
CONRAM		4.7	4.9	4.6	4.9 (4.4- 5.5)	4.9 (4.2- 5.6)	5.4 (4.6- 5.9)	5.6 (4.6- 6.0)	
EXTERNAL CHARACTERS									
NV	76	80.5	90	90	82.3 (72.5-93.0)	88.3 (80.0-96.2)	84.9 (80.1-90.5)	91.6 (84.3-101.0)	
TV	74	69.5	68	69	84.8 (73.8-93.7)	105.4 (99.0-119.6)	76.3 (69.0-81.6)	82.0 (73.9-88.1)	
HF	13.5	13.2	13.2	13.3	14.3 (13.0-15.4)	16.6 (14.8-18.4)	13.8 (12.8-15.0)	15.0 (13.5-15.9)	
EAR	16++	16.7	17.5	16.9	18.0 (16.4-20.8)	19.4 (18.0-20.7)	17.1 (15.2-19.5)	20.0 (18.5-21.7)	
WEIGHT		15	18	16.5	20.0 (10.0-33.0)	26.4 (21.0-30.0)	24.5 (17.5-33.0)	28.6 (18.0-43.0)	

* Holotype, measurements from Thomas (1906)

+ Calculated from Tate (1947)

++ from specimen label (fide' L. Smith)

It differs from *Pseudantechinus bilarni* in averaging smaller in skull, dental and external characters and in having shorter: MAXL 25.2 (24.7-25.5) v. 28.3 (26.3-30.5), C¹-M⁵ 9.6 (9.5-9.7) v. 10.7 (10.0-11.4), interorbital width (INORB) 5.2 (5.1-5.3) v. 5.8 (5.4-6.2), dentary condyle to I₁, (DC-I₁) 18.5 (18.1-18.9) v. 20.6 (19.1-22.4), I₁-M₅ 11.0 (10.9-11.1) v. 12.8 (11.6-13.6), HF 13.2 (13.2-13.3) v. 16.6 (14.8-18.4), EAR 17.0 (16.7-17.5) v. 19.4 (18.0-20.7) and WT 16.5 (15-18) v. 26.4 (21-30); OBUL wider (and BULTOT longer) relative to MAXL (Figure 3); periotic tympanic wing more inflated; small spike on lateral surface of alisphenoid tympanic bulla immediately anterior to postglenoid process present rather than absent; P³ smaller, 1/2 to 3/4 rather than >3/4 occlusal surface area of P²; P³ absent rather than always present; M² stylar cusp B low, fused with parastyle rather than separate from parastyle, moderate to occasionally tall;

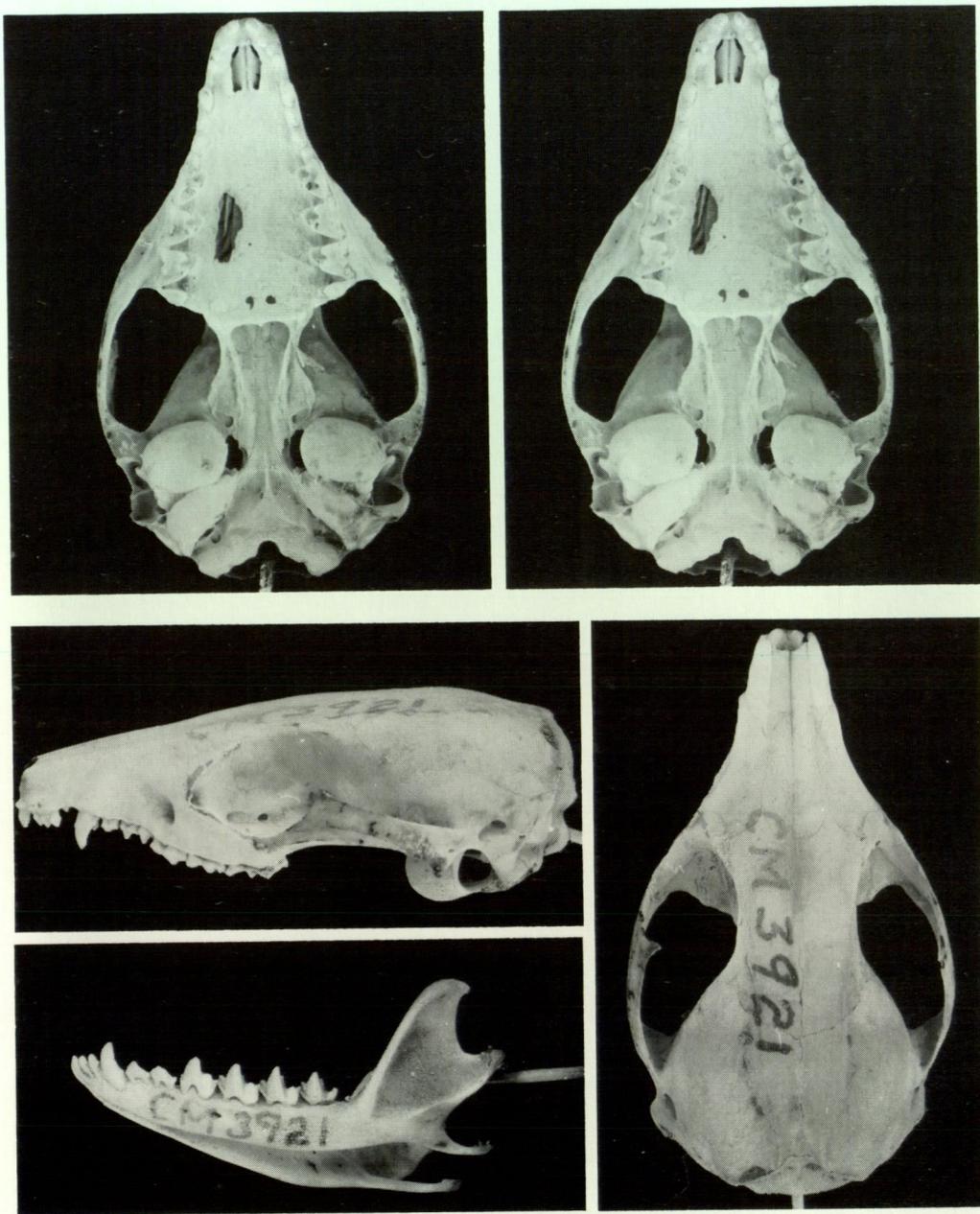


Figure 1: Skull and dentary, and ventral aspect of skull as stereopairs of *Pseudantechnus mimulus* CM 3921.

ectotympanic dorsolateral edge more expanded into postglenoid fossa; lateral squamosal wall of epitympanic sinus more pronounced; tail subequal or shorter (76-86%) rather than 109-144% length of tip of snout to vent, more heavily furred.

It differs from *P. macdonnellensis* in averaging smaller in most skull and external characters and in having smaller: MAXL 25.2 (24.7-25.5) v. 27.5 (25.9-29.7) and BULTOT 5.6 (5.3-5.9) v. 6.5 (6.0-7.0); OBUL wider relative to MAXL (Figure 3); periotic tympanic bulla less inflated; small spike on lateral surface of alisphenoid tympanic bulla immediately anterior to postglenoid process present rather than absent; P³ much larger, 1/2 to 3/4 rather than <1/4 (or tiny or absent) occlusal surface area of P²; M² stylar cusp B fused rather than not fused (when present) with parastyle; squamosal and frontal sutures of lateral cranium not close rather than close or in contact.

It differs from *P. woolleyae* in averaging smaller in most skull, dental and external characters: e.g., MAXL 25.2 (24.7-25.5) v. 29.9 (28.0-31.2), C¹-M⁵ 9.6 (9.5-9.7) v. 11.3 (10.8-11.6); bulla much smaller: periotic tympanic wing not as inflated; small spike on lateral surface of alisphenoid tympanic bulla immediately anterior to postglenoid process present rather than absent; P³ smaller, 1/2 to 3/4 rather than >3/4 surface area of P²; P³ absent rather than usually present; M² stylar cusp B low, fused with parastyle rather than moderately high and separate from parastyle; M⁴ entoconid tiny to absent rather than moderate to large.

Description

Skull and dentary (Table 1, Figures 1 and 2)

Skull short, particularly rostrum as suggested by short nasals (slightly flared posteriorly), skull broad posteriorly, distance outside bullae (OBUL) broad; interorbital moderately wide; cranium not inflated, sagittal crest and postorbital swellings absent; lambdoidal crest low; squamosal and frontals separated laterally on cranium by from 0.96-1.02 mm (L.A.S. could not detect separation of the squamosal and frontal in the holotype because the situation was obscure. Paula Jenkins, Natural History Museum, London, kindly re-examined this aspect of the holotype skull for me. She also noted that "the degree of contact between frontal and squamosal on the holotype of *Phascogale mimulus* is unclear because of the obscuring by the internal shelving". However, the sketch she prepared shows that the internal shelving of the frontal and squamosal bones do not contact beneath the parietal. This is the situation occurring in the specimens from Sir Edward Pellew Is and strongly indicates a considerable separation between the squamosal and frontal bones. In *Pseudantechinus* where the frontal and squamosal bones are in contact or very close (e.g. *ningbing*), their internal shelving overlaps beneath the parietal. Maxillary palatal vacuities moderately long, located posterior to a line joining M² metacones and anterior of a line joining M⁴ metacones; premaxillary palatal vacuities do not extend posterior to a line joining mid point of C¹ alveoli; palatine vacuities tiny to moderate: in CM 2894 and CM 2697 close to maxillary-palatine suture, in CM 3921 and holotype larger and closer to palate posterior margin; alisphenoid tympanic bulla moderate size, moderately inflated, ventrally covers ectotympanic wing

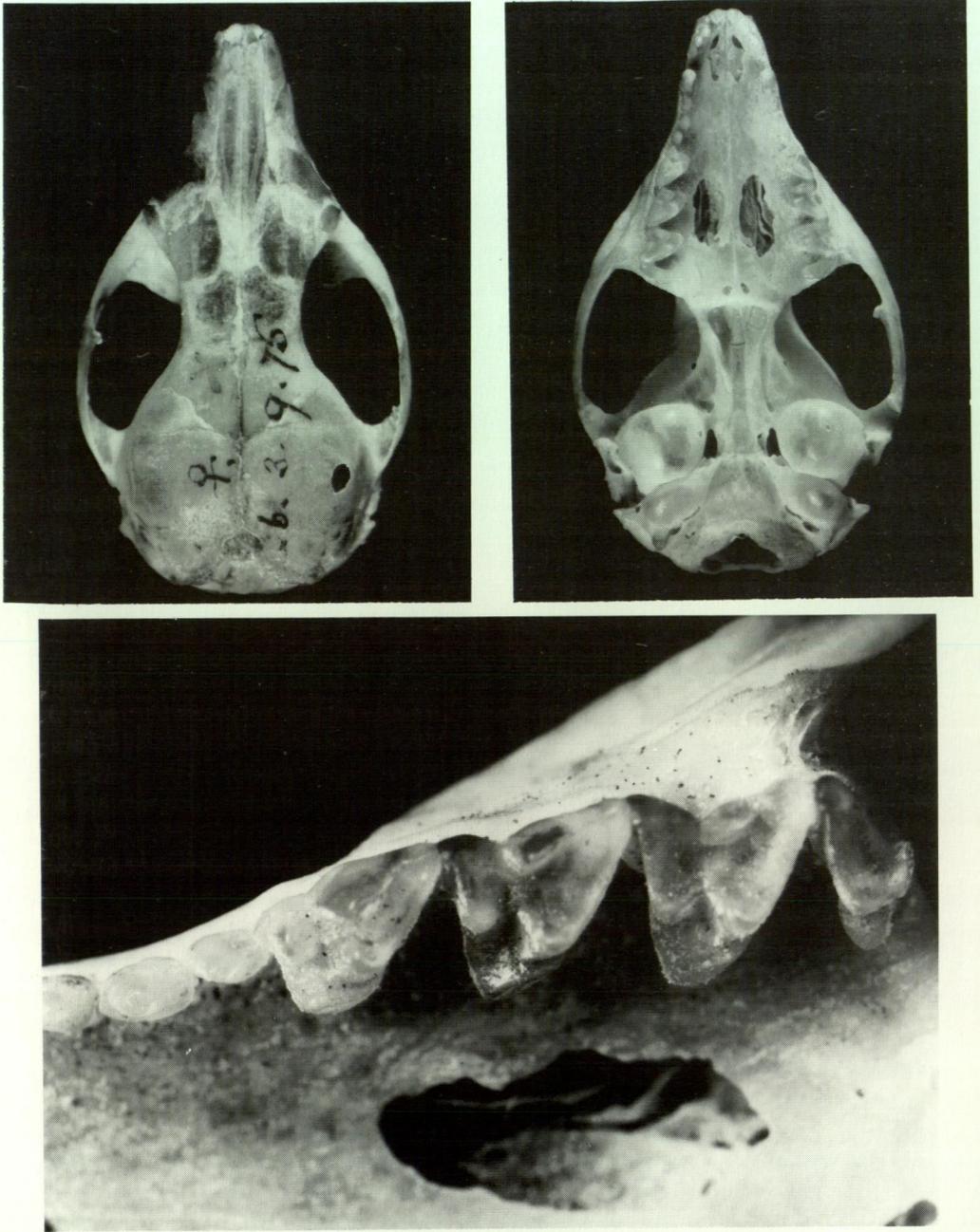
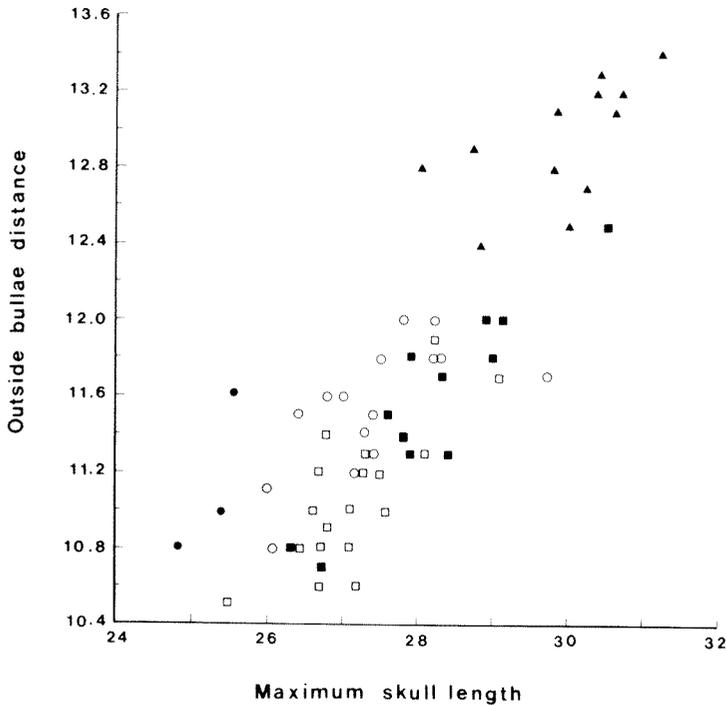


Figure 2: Dorsal and ventral aspect of the skull and oblique view of the left molar and premolar row of *Pseudantechninus mimulus* holotype.

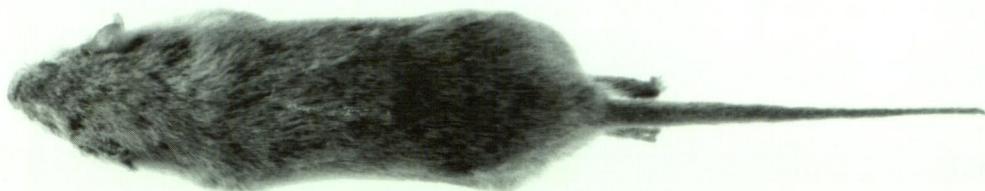
Figure 3: Relationship between distance outside bullae (OBUL) and maximum skull length (MAXL) for *Pseudantechinus mimulus* (●), *P. ningbing* (□), *P. bilarni* (■), *P. macdonnellensis* (○) and *P. woolleyae* (▲).



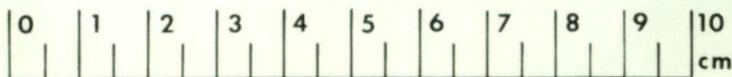
completely or almost so, in wide contact with periotic tympanic wing; small spike, up to 0.22 mm long, on lateral surface of alisphenoid tympanic bulla immediately anterior to postglenoid process (also in holotype fide' L.A.S. and Figure 2), wide apart; dorsolateral edge of ectotympanic expanded into 25-60% of glenoid fossa; lateral squamosal wall of ectotympanic sinus moderately expanded covering approximately 15-20% of opening of external auditory meatus; squamosal part of zygomata broader than jugal part — which has a 0.4 mm vertical spike at its apex; dentary with distance between tip of angular process and articular condyle (ANGCON) subequal to that between anterior condyle and tip of ascending ramus (CONRAM).

Dentition (Table 1, Figures 1 and 2)

I¹ tallest of upper incisors, separated from I² by diastema which approximates I¹ thickness; I², I³ and I⁴ approximately same height and crown area occasionally I² shorter than I⁴; I⁴ separated from C¹ by substantial diastema; C¹ width slight antero- and postero-lingual cingulum; C¹ crown height about x2 1/2 that of P³, slight diastema between C¹ and P¹; P¹ and P² crown height subequal, taller than P³; upper premolars with antero- and postero-basal cingules, encircled by moderate cingulum

Figure 4: Scientific skin of *P. mimulus* CM 3921.

C.S.I.R.O. WILDLIFE			
<i>Pseudantechinus macdonnellensis</i>			
Cabbage tree Cove, North Island			Alt.
St. Edward and Pelton Islands			Date 31 July 1967
Reg. No. CM 3921	Data Sheet No. EP 879	Sex ♂	Wt. 15g.



except for lingual and buccal aspect where it narrows; occlusal crown area of P^3 from $1/2$ to $3/4$ that of P^2 (approximately $3/4$ in holotype, fide' L.A.S. and Figure 2); P^3 with two roots, except left side of CM 2697 which appears to have a single root; on M^2 metacone subequal to styler cusp (St D), St A fused with precingulum, St B fused with paracone (also in holotype, fide' L.A.S. and Figure 2), St E rudimentary; on M^3 St B shorter than St D which is shorter than metacone, St E rudimentary; on M^4 St B and St D subequal in height, St E absent, St D shorter than metacone; preprotocrista terminates at anterior base of M^2 to M^4 paracone, forms narrow contact with anterior cingular shelf on M^2 ; preparacrista absent on M^2 , increases in length from M^2 to M^5 ; postprotocrista connects to posterolingual base of metacone; posterior lingual and buccal cingula absent on M^2 to M^5 ; on M^3 to M^5 preparacrista longer than postparacrista, which is approximately half length of premetacrista, which is approximately half length of postmetacrista; on M^5 metacone rudimentary, protocone and paracone very reduced, preparacrista about $x 2$ $1/2$ length of postparacrista; M^5 narrower than M^4 .

I_1 , taller crowned than I_2 which is subequal in length to I_3 ; I_1 to I_3 with posterior cingular cuspule; C_1 tall, twice height P_1 , very slight lingual cingulum and tiny posterior cingular cuspule; P_1 and P_2 crown area subequal; P_3 absent; P_1 and P_2 with narrow encircling cingulum except for buccal aspect above P_1 and P_2 anterior root; P_2 and M_2 separated by short diastema; on M_2 protoconid much taller than metaconid, paraconid rudimentary, hypoconid much shorter than metaconid, hypoconulid small, entoconid rudimentary or absent; on M_3 to M_5 protoconid much taller than metaconid which is taller than

paraconid; on M_3 entoconid, hypoconulid and hypoconid subequal in height; on M_4 entoconid much smaller than hypoconulid and hypoconid which are subequal in height; on M_5 hypocristid much shorter such that hypoconulid and hypoconid fuse, entoconid absent; cristid obliqua contacts metacrista at base of central notch in M_5 but is progressively closer to protoconid in M_4 to M_3 ; on M_2 paracristid slightly longer than metacristid which is subequal in length to cristid obliqua which is shorter than hypocristid; on M_3 paracristid longer than metacristid and hypocristid, which are much longer than cristid obliqua; on M_4 paracristid longer than metacristid, which is longer than hypocristid, which is longer than cristid obliqua; on M_5 paracristid slightly longer than metacristid; M_2 to M_5 have anterior cingula but no lingual or buccal cingula; M_2 to M_4 have posterior cingula which decrease in width posteriorly.

EXTERNALS (Table 1, Figure 4)

Pelage

Described from CM 2697, CM 2894 and CM 3921 study skins.

Overall dorsal fur colour Buffy Brown, ventrally Tilleul Buff. Hairs on shoulders, back and flanks up to 6 mm, base of hairs Deep Neutral Gray, distal 2 mm Drab lightly tipped with Clay Color towards posterior. Hairs on forehead shorter than 4 mm, basal one-third Light Mouse Gray below narrow band of Mummy Brown, distal broad band of Drab tipped with Mummy Brown, hairs on rostrum and side of face similar but without Light Mouse Gray base. Ears lightly furred with 1.3 mm long Cinnamon hairs on both the inner and outer surfaces. Hairs on chin and side of mouth Pale Gull Gray. Hairs on ventral surface of body and throat up to 6 mm long, base of hairs Light Neutral Gray, distal three-quarters Pale Gull Gray. Hair on manus and pes up to 1.6 mm long, Tilleul-Buff; forearm and hind leg with Light Neutral Gray tipped with Tilleul-Buff.

Tail moderately well furred, hairs up to 5 mm long, on dorsal surface Clay Color; on ventral surface Vinaceous-Buff; at tip up to 4.5 mm long, extending slightly beyond tip but not forming tuft. On each side of face approximately 20 mystacial vibrissae, posteriorly these are up to 28 mm long, Clove Brown at base to Pale Gull Gray distally, on edge of lips shorter, up to 12 mm, Pale Gull Gray; two supraorbital vibrissae up to 16 mm long and 6 to 8 genal vibrissae up to 25 mm long with same colour as posterior mysticals, 2 or more submental vibrissae up to 6 mm long. Beneath chin 4 interramal vibrissae up to 12 mm long, Pale Gull Gray. On forearms up to 5 ulnar carpal vibrissae, Pale Gull Gray, up to 12 mm long; 2 to 3 vibrissae between the anconeal and medial antebrachial regions with the single anconeal vibrissa in the anconeal area longer and up to 10 mm.

Pes and tail

Pes terminal pads small, smooth; three interdigital pads moderately large, elongate, separate from each other; hallucal pads elongate, approximately half size of interdigital pads; metatarsal and posthallucal pads subequal in size to interdigital pads. All pads, except terminal ones, heavily striate. Tail much shorter than snout to vent length; base noticeably thickened in skin of CM 2894, not possible to detect incassation.



Figure 5: Locality of *Pseudantechinus mimulus* in Northern Territory — indicated by arrows.

Distribution

Known only from type locality, Alexandria and North I., Sir Edward Pellew Group (Figure 5). Navigation charts covering this group of islands (by Hydrographic Service, R.A.N. Ed. Aug. 1971) indicate that at low tide both Centre I. and South West I. are connected by dry banks to the mainland. North I. is separated from Centre I. by a shallow channel *c.* 2.4 fathoms (= 4.4 m) deep. Current sea levels were reached around the broad shelves of the Australian coastline about 6500 yr BP, although there is evidence that seas may have fallen by 1 to 2 m in the Gulf of Carpentaria since *c.* 6500 yr BP (Hopley and Thom 1983). North I. would likely have been joined to other islands in this group at least by 6000 yr BP. However, given the nature of sedimentation shifts,

particularly at the mouths of rivers, it is possible that disposition of sand banks and erosion channels between these islands may be of very recent origin and that the population of *P. mimulus* on North I. may have been much more recently connected to other islands in this group and the mainland than 6500 yr BP.

Remarks

The description of the holotype of *P. mimulus* suggests some differences from the specimens from North I. For example, in the holotype the length of head and body are subequal to the tail whereas in the North I. specimens the tail is significantly shorter (76-86% length of head and body). This difference could be attributed to the use of different measuring points by Thomas (1906) and by the collectors of the recent specimens; the latter measurements were from the snout to the vent length, whereas Thomas (1906) measured from snout to the root of the tail (Thomas 1888:vii). However Mr L.A. Smith reports that the tail of CM 3921 is noticeably shorter than that of holotype. It is of interest that in all four available *P. mimulus* specimens the total (head to tail) is similar at c. 150-160. L.A.S. also reports that the alisphenoid tympanic bullae of the holotype is both slightly longer and more inflated than CM 3921, and that the periotic tympanic wing is both slightly shorter and less inflated in the holotype. These differences are, however, slight and are not apparent from comparison of the three North I. specimens with photographs of the holotype.

Most measurements presented in Table 1 are similar for all four *P. mimulus* specimens; measurements not presented in Table 1 for North I. specimens indicate that they are also similar to values presented for the holotype in Tate (1947). For example (North I. values in brackets followed by holotype) palatal length (13.1-13.6) 13; anterior palatal foramen (2.0-2.6) 2.0; braincase width (11.2-12.0) 11.0; M²-M⁴ length (5.4-5.6) 5.2; crown lengths of: I² (0.44-0.50) 0.50; I³ (0.41-0.47) 0.45; I⁴ (0.50-0.52) 0.60; P¹ (0.77-0.88) 0.80; P² (0.88-0.99) 0.90; P³ (0.62-0.81) 0.80; I₁ (0.49-0.54) 0.60; I₂ (0.37-0.44) 0.45; I₃ (0.38-0.42) 0.45; P₁ (1.07-1.18) 1.00; P₂ (1.17-1.17) 1.25.

The relative size of premolars in the holotype was stated by Thomas (1906) as follows "the last premolariform tooth, the 'secator' (= P³) ... while similarly absent in the lower jaw, is in the upper well developed, two rooted, barely smaller than the tooth in front of it, and slightly larger than P¹". While this is also the case in the North I. specimens if these teeth are viewed laterally, the occlusal view of them indicates that P³ is noticeably smaller than P².

In conclusion, while the North I. specimens generally agree with the descriptions available for *P. mimulus* by Thomas (1906), Tate (1947), Mr L. Smith (pers. comm.), Ms P. Jenkins (pers. comm.) and photographs of the holotype (Figure 2), the North I. specimens, compared to the holotype, are generally slightly larger, have a longer molar row and probably a shorter tail. Whether or not these differences are such as to require distinction of this island form will not be resolved until more specimens of the mainland form are available for study.

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