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FRUIT BATS OF THE GENUS *DOBSONIA* PALMER, 1898 FROM THE ISLANDS OF BIAK, OWII, NUMFOOR AND YAPEN, IRIAN JAYA (MAMMALIA, MEGACHIROPTERA)

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ABSTRACT

Dobsonia minor (Dobson, 1879) and *D. magna* Thomas, 1905 are recorded from Yapen Island for the first time. *D. beauforti* Bergmans, 1975 is recorded from Biak and Owii Islands; hitherto, it was known from Waigeo only. *Dobsonia emersa* n. sp. is described from Biak and Owii Islands. A possibly related taxon is reported from Numfoor Island. The taxonomy of *Dobsonia* species belonging to the *moluccensis* group *sensu* Andersen, 1909 is briefly discussed.

INTRODUCTION

Jentink (1887; 1888; 1906) mentioned a fruit bat of the genus *Dobsonia* Palmer, 1898 from the Island of Méfoor (= Numfoor; see Laurie & Hill, 1954), present in the Rijksmuseum van Natuurlijke Historie at Leiden. Meyer (1899) wrote about specimens of *Dobsonia* from Mansinam, an islet just off Manokwari (0°53′S, 134°05′E), and from Mysore (most probably the same as Misore, Schouten Islands; see Laurie & Hill, 1954), then in the Staatliches Museum für Tierkunde in Dresden. Both authors recognized only one species within this genus, then called *Cephalotes peronii* Geoffroy Saint-Hilaire, 1810 and had identified their specimens accordingly. In his enumeration of the distribution of *Cephalotes palliatus* Geoffroy Saint-Hilaire, 1810 (also meant to comprise all known representatives of the genus *Dobsonia*; a *nomen dubium*: see Andersen, 1912) Tjeenk Willink (1905) mentioned "Mofoor" and "Misoor". Most likely these are Numfoor and Schouten Islands, as Tjeenk Willink's report seems to be based on literature only, as far as *Dobsonia* is concerned.

Cephalotus peronii, synonym of *Dobsonia peronii*, is confined to the Lesser Sunda Islands, however. Jentink's specimen from Numfoor still exists and will be treated below under *Dobsonia* species. Meyer's specimens were destroyed during World War II (Dr. A. Feiler, in lit., 19-VI-1978). The specimen from Mansinam had a forearm length of 148 mm (Meyer, 1899) and will have represented *Dobsonia magna*

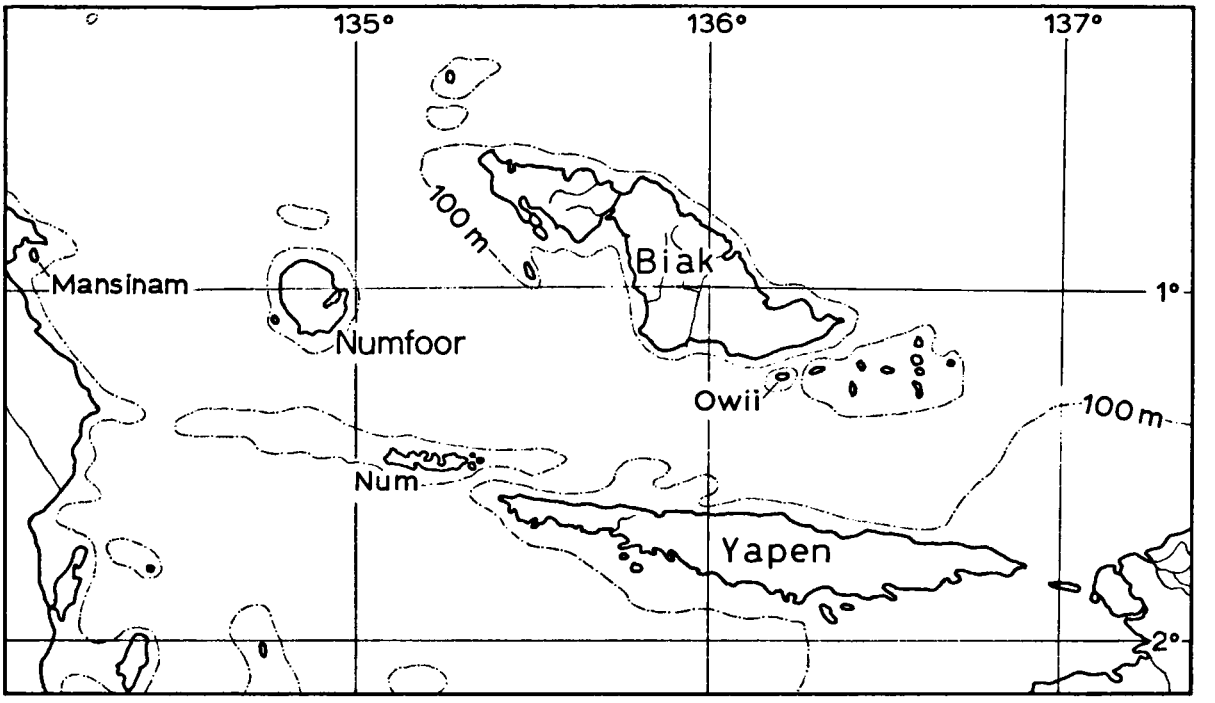

Fig. 1. Position of islands from which *Dobsonia* specimens are described.

Thomas, 1905. The one from Mysore may have belonged to either *Dobsonia beauforti* Bergmans, 1975 or *D. emersa* n. sp., described below. We do not know of any other report on bats of this genus from islands in this region of Irian Jaya. Apart from the Numfoor specimen we have found and studied, in various collections, a number of other specimens from such islands, representing four different taxa, one of which is new. This material forms the basis of this paper, which continues a series on the taxonomy and geography of the genus *Dobsonia* (Bergmans, 1975a; 1978; 1979; de Jong & Bergmans, 1981).

MATERIAL

The studied specimens are listed under the respective species. They exist of skins and skulls only. All measurements are given in mm. For positions of the islands concerned see the map (Fig. 1).

Collections have been abbreviated as follows:

AMNH	American Museum of Natural History, New York
AMS	Australian Museum, Sydney
BMH	Bernice P. Bishop Museum, Honolulu
BMNH	British Museum (Natural History), London
FMNH	Field Museum of Natural History, Chicago
MZB	Museum Zoologicum Bogoriense, Bogor
NAMRU	United States Naval Medical Research Unit 2, Jakarta
RMNH	Rijksmuseum van Natuurlijke Historie, Leiden
SB	Het Schol, Balkbrug (private collection)
ZMA	Zoölogisch Museum, Amsterdam
ZMB	Zoologisches Museum, Berlin

TAXONOMY

Dobsonia minor (Dobson, 1879)

Material: 1 adult ♀, 1 juvenile ♂, Yapen, 25-III-1931, leg. G. Stein (ZMB 91783-91784).

Remarks. — External features and measurements of the ♀ (Table 1) suggest that the Yapen Island population may be morphologically

identical with the New Guinea mainland population. Forearm lengths in seven adult ♀♀ (all: dry skins) from various localities on the New Guinea mainland vary from 76.5 to 86.3 (mean 83.5); greatest skull lengths of 4 adult ♀♀ (same specimens) vary from 36.6 to 39.1 (mean 37.65).

Dr. A. C. Ziegler (*in lit.*, 21-III-1978) recorded as forearm lengths of two ♂♂ collected at Dawai River, Yapen Island (BMH 21996 and 22032) 80 and 79, respectively. These are also in line with the known variation in New Guinea mainland ♂♂; 21 ♂♂ from various localities there have forearm lengths of 74.4 to 83.2 (mean 79.2) and nine of these have greatest skull lenghts of 35.9 to 38.0 (mean 37.3). (New Guinea mainland specimens seen in AMNH, AMS, BMNH, MZB and SB collections.)

Dobsonia magna Thomas, 1905

Material: 1 adult ♂, 1 juvenile of unknown sex, 3 immature ♂♂, Yapen, 8-III- (the adult) and 22/23-III-1931 (the others), leg. G. Stein (ZMB 91768-91771 and I882).

Remarks. — The forearm length of the adult ♂ (see for measurements Table 1) falls within the variation shown by adult ♂♂ from the New Guinea mainland; 34 adult ♂♂ from various localities there have forearm lengths of 135.0 to 155.6 (mean 147.6). Its greatest skull lenght (approximately 57) is probably somewhat smaller than in New Guinean specimens, of which 39 adult ♂♂ have greatest skull lengths of 58.8 to 64.2 (mean 61.7). One of the other Yapen specimens, ZMB I882, is subadult and has a forearm length of 131.4 and a greatest skull length of 55.9; this also suggests smaller average dimensions in the Yapen population if compared to New Guinea populations. (The adult New Guinea specimens referred to are in the AMNH, AMS, FMNH, RMNH and ZMB collections.)

Our reasons for treating *D. magna* as a species, and not as a subspecies of *D. moluccensis* (Quoy & Gaimard, 1830) as is current use since Andersen (1912), are elaborated in the Discussion.

Dobsonia beauforti Bergmans, 1975

Material: 1 immature ♂ and 1 adult ♀, Sorido (01°12′S, 136°04′E), Biak, altitude 3 m, 6-VIII-1976, leg. NAMRU-2 Detachment (NAMRU 5601-5602); 1 adult ♂ and 1 adult ♀, Owii (01°15′S, 136°13′E), altitude 15 m, 11-VIII-1976, leg. NAMRU-2 Detachment (NAMRU 5644, 5650).

Remarks. — In the original description of *D. beauforti*, Bergmans (1975a) gave as forearm lengths in three ♂♂ 106.3-111.4 (mean 108.2) and in seven ♀♀ 99.6-107.6 (mean 105.4), and as greatest skull lengths (see also Bergmans, 1978, bottom of page 12) in two ♂♂ 44.6 and 45.3 and in seven ♀♀ 41.9-43.1 (mean 42.5). Additional nearly topotypical specimens were found in the BMNH alcohol collection: 2 adult and 2 immature ♂♂, 7 adult and 2 immature ♀♀ (all skulls *in situ*), without date, Waifoi, Mayalibit Bay, Waigeo, collected by Miss L. E. Cheesman (BMNH 46.597-46.615, no individual numbers). The two adult ♂♂, with forearm lengths of 111.0 and 108.7, respectively, do not change the known range but heighten the mean to 108.9. The seven ♀♀ have forearm lengths varying from 106.5 to 113.8; the total range in the 14 known adult ♀♀ is 99.6-113.8 (new mean 107.05).

The present adult specimens from Biak and Owii Islands (measurements: Table 1) do not differ in body dimensions. In skull dimensions the ♀♀ are slightly larger than the known ones from Waigeo - but the known range is small and extension was to be expected. The fur colours are more intense, especially in the adult ♂. In this specimen (NAMRU 5644) the fur on nape and shoulders is orange-brown with a greenish hue, and the median dark patch of fur on breast and belly is rather orange-brown too. In skull form there is no apparent difference. The Biak and Owii specimens have slightly longer and heavier teeth than Waigeo specimens, and a number of teeth characters are more pronounced. Upper and lower canines and premolars are distinctly longer and bulkier; surface ledges or cusps in P^4 and M_1 are more pronounced; posterior basal ledges are generally stronger,

Table 1. Measurements in mm and weights in g of adult specimens of *Dobsonia minor* (Dobson) and *D. magna* Thomas from Yapen Island; of *D. beauforti* Bergmans from Biak and Owii Islands; of *D. emersa* n. sp. including subadult specimens and teeth measurements — from Biak and Owii Islands; and of *Dobsonia* species from Numfoor Island.

Species	*minor*	*magna*	*beauforti*			*emersa*					spec.
Sex	♀	♂	♀	♂	♀	Type ♂	♀	♂*	♂*	♀*	♂
Island	Yapen	Yapen	Biak	Owii	Owii	Biak	Owii	Biak	Owii	Owii	Numfoor
Collection	ZMB	ZMB	NAMRU	NAMRU	NAMRU	NAMRU	NAMRU	NAMRU	NAMRU	NAMRU	RMNH
Number	91783°	91768	5602	5644	5650	5605	5663	5604	5651	5658	
Forearm length	85.3	141.4	105.9	106.4	107.9	113.7	113.7	107.8	111.8	109.1	± 112.5
Greatest skull length	37.4	Æ57′	43.4	44.7	44.2	49.8	47.8	47.8	48.9	47.1	
Condylobasal length	35.7		41.0	42.6	41.9	48.0	46.2	45.7	47.2	45.0	
Rostrum length	12.0		13.2	13.8	13.6	16.3	15.9				19.0
Palatal length			21.8	22.0	21.7	26.4	25.8				
Mandibular length	29.6	47.1	33.3	34.5	34.0	39.2	37.8				
Cranium width	15.5	20.0	16.5	17.0	17.0	18.9	18.7				
Interorbital width		9.9	8.1	7.9	7.5	9.3	8.6				10.9
Postorbital width	6.9	8.9	7.1	6.9	7.1	8.3	8.0				
Orbital diameter						11.0	11.0	10.6	10.8	10.4	
Zygomatic width		33.8	25.3	27.5	27.6	30.2	28.2	28.0	28.7	28.4	
C^1-C^1 (crowns)		10.8	8.5	8.7	8.3	9.3	8.8				10.8
C^1-M^2 (crowns)	13.6	23.8	17.2	17.4	17.2	20.7	20.1	20.0	20.7	19.0	23.5
M^1-M^1 (crowns)	10.8	16.6	13.1	13.0	13.0	15.4	14.9				
M^2-M^2 (crowns)			11.3	11.4	11.1	13.8	13.5				
C_1-M_3 (crowns)		26.3	18.1	18.4	18.2	21.7	21.1				25.2
P^3 length						3.8	3.7	3.8	4.0	3.5	
widht						2.9	2.8	2.9	3.0	2.7	
P^4 length						4.3	4.3	4.0	4.3	3.9	
width						3.0	2.9	3.0	3.0	2.9	
M^1 length						5.5	5.4	4.8	5.4	4.6	
width						2.8	2.8	2.7	3.0	2.6	
P_3 length						3.7	3.8	3.8	3.9	3.6	
width						2.3	2.2	2.4	2.5	2.2	
P_4 length						4.3	4.2	4.3	4.4	4.0	
width						2.5	2.5	2.5	2.7	2.5	
M_1 length						4.1	4.1	4.1	4.4	3.9	
width						2.3	2.3	2.3	2.3	2.2	
M_2 length						3.4	3.5	3.3	3.5	3.3	
width						2.3	2.3	2.3	2.3	2.2	
Weight			120	156	140	180	169	130	163	104	

* = Subadult specimens; ° = calvarium broken and repaired: lengths possibly slightly inaccurate; ¡ = premaxillaries missing.

notably in P^3 and P_3; notches in outer longitudinal ridges in P^4, M^1, P_4 and M_1 are generally sharper (there are even notches in P^3 outer ledges in 2 of the 4 specimens).

All these differences are slight or of a gradual nature and do, in our opinion, not justify a taxonomic distinction.

Dobsonia emersa n. sp.

Holotype: An adult ♂, skin and skull, collected in a garden in a coastal area at Sorido, Biak Island (01°12′S, 136°04′E), altitude 3 m, 6-VIII-1976, by NAMRU-2 Detachment (NAMRU 5605).

Paratypes: 1 subadult ♂, skin and skull, all data as for holotype specimen (NAMRU 5604); 1 subadult ♂, 1 subadult ♀, and 1 adult ♀, skins and skulls, collected in secondary forest on Owii Island (01°15′S, 136°13′E), altitude 30 m, 11-VIII-1976, by NAMRU-2 Detachment (NAMRU 5651, 5658, and 5663, respectively).

Diagnosis: A medium-sized typical *Dobsonia*, by its dental characters a member of the *moluccensis* group *sensu* Andersen, 1909 (see fig. 24 *in* Andersen, 1912), within this group with small body and skull dimensions, distinctly curved rostrum profile, and small and narrow teeth. Geographically widely separated from its nearest relatives.

Differential diagnosis: As Table 1 shows, *Dobsonia emersa* is distinctly smaller than *D. moluccensis*, *D. magna*, typical *D. anderseni*, and *D. chapmani* Rabor, 1952; only in skull measurements there is some overlap with *chapmani*, but this species most probably averages distinctly higher and moreover has a very weakly curved rostral profile (see fig. 4 *in*: Bergmans, 1978). In body dimensions, *D. emersa* falls within the limits of *D. exoleta* Andersen, 1909 but this species has an averagingly larger skull with a weakly curved or almost linear rostrum profile, and distinctly heavier teeth (de Jong & Bergmans, 1981). In body size *D. emersa* also agrees with some of the populations of *D. pannietensis* (De Vis, 1905) (see Bergmans, 1979); the adult male holotype specimen with those from the Louisiades, the adult female paratype intermediating between those from the Louisiades and from Woodlark Island. *D. pannietensis* males have larger skulls, both sexes have a relatively more slender skull with less curved rostrum profile, less heavy and less upward curved zygomatic arches, and generally heavier and more modified teeth, with stronger antero-internal ledges in P^3, P^4, P_3 and P_4. From all other *Dobsonia* species, *emersa* differs by the characters separating the *moluccensis* group from the others.

Description. — Most body characters are typical of the genus and do not need description here. The short and dense fur on top of the head and on the centre of the nape is dark, somewhat grayish, brown. In the subadult specimens this fur is quite soft and woolly on the nape and continues as such in the mantle; in the adult specimens it becomes quite stiff on the nape while the mantle fur remains soft, although it thins out. The fur on the throat consists of scattered hairs only, in both subadults and adults. The skin of the ears is unpigmented near the basis and dark brown beyond. Wings and tail membrane are dark brown. The fur on flanks and belly is drab brown, with soft short hairs and thin long hairs, the belly moreover with a longitudinal zone of relatively dense, short, weakly orange golden hairs in the centre. Thumb and toe nails are transparent light brownish yellow, with some darker brown in the central part.

Skull with curved dorsal rostrum profile, relatively large orbits, distinct but low sagittal and occipital crests in both sexes (weakest in females), and quite heavy zygomatic arches. All five known specimens with two upper and two lower incisors. Upper canines rather slender, somewhat proclivous and heavier and longer in males, basis narrowing posteriorly; lingual shelf with irregularly denticulated edge. P^3 with weak antero-internal basal ledge, rather sharply pointed inner cusp, and distinct but low posterior basal ledge. P^4 with somewhat stronger antero-internal and posterior basal ledges. M^1 with antero-internal corner essentially a part of the main inner ledge and only weakly marked off, and with rounded surface

ridge in posterior half (quite weak in two specimens). M^2 triangularly ovate, with weak surface cusp. Lower canines proclivous, heavier and relatively slightly longer in males. P_3 with only a very faint trace of an antero-internal ledge in four specimens and with a weak ledge in one (NAMRU 5663), and with a rather weak posterior basal ledge. P_4 with a moderately set off, short antero-internal ledge and a somewhat stronger posterior basal ledge than P_3. M_1 without antero-internal cusp or ledge (the anterior part of the main inner ledge may look somewhat set off because this ledge has some incurvations) and with a weak but distinct median surface cusp or small ridge in the posterior half. M_2 with median surface ridge in anterior two thirds, this ridge connected with main outer ledge via anterior ledge and separated from main inner ledge by an incurvation of the anterior ledge. M_3 with faint central surface cusp in only one specimen (NAMRU 5604).

Derivatio nominis. — The specific name *emersa*, from **emergere** meaning to emerge, alludes to the fact that although Jentink and Meyer wrote about *Dobsonia* specimens from islands in the Geelvink Bay already more than 80 years ago (Jentink almost a century ago: in 1887), the genus' four representatives there, including the new taxon *emersa*, have remained hidden to science all those years, to turn up (in part: again) only now.

Dobsonia species

Material: 1 adult ♂, mounted, skull extracted (incomplete), "Méfoor" (= Numfoor), January 1869, coll. C. B. H. baron von Rosenberg (RMNH; Jentink, 1887: 267, skull *m*; Jentink, 1888: 157, specimen *ii*).

Remarks. — It was most probably Andersen who, when visiting the museum at Leiden during preparations for his catalogue (1912), identified this specimen as *Dobsonia magna*, as this name appears in red ink on the labels of both mounted specimen and skull; red ink when used apparently in the second instance on old Megachiroptera labels may often, if not always, be considered as Andersen's signature - in the collections of museums he visited, of course. (Also in red ink the catalogue letters *m* and *ii* on the labels have been replaced, by *a* and *c* respectively, but is not clear why this was done, as the specimen and its original labels are in full agreement with what Jentink wrote in his catalogues of 1887 and 1888.) Anyway, it is quite unlikely that Andersen did not see the specimen, at the time. The fact then, that he made no mention of it in his catalogue (1912), may reflect that later on he seriously doubted his former identification.

Its dental characters identify the specimen as belonging in Andersen's *moluccensis* group but it is much too small to be conspecific with *magna*. Its forearm length was given by Jentink (1906) as 109; its right forearm can not be measured but the length of its left was found to be about 112.5 (third metacarpal length: 75.8; fifth: 70.4), which by itself would suggest that the specimen represents the geographically near *emersa*, but its skull is larger than in that species. Its greatest skull length is possibly near 54. Some measurements are given in Table 1. The lengths of its cheek teeth are near the maxima in *emersa*, most widths are somewhat larger than in that species. The data to be gained from this incomplete specimen do not allow for a clear understanding of its taxonomic status.

DISCUSSION

With regard to the distribution of the genus *Dobsonia* the northern islands in the Geelvink Bay are of particular interest. Yapen, with *D. minor* and *D. magna*, apparently represents a mere extension of the northern New Guinea mainland distribution. The *Dobsonia* fauna of Biak and Owii, with *D. emersa* of the *moluccensis* group and *D. beauforti* of the *viridis* group, is of another nature: *emersa* may be considered a near relative of *magna* and as such marks the Schouten Islands, to which Biak and Owii belong, as one in the series of island groups off mainland New Guinea with a *magna* relative; but the relatives of *beauforti* are found only on islands to the west and east and not on the New Guinea mainland, and Biak and Owii form a

further link in this chain of islands, of which Waigeo with *beauforti* is the nearest western island and Umboi with *D. praedatrix* Andersen, 1909 (see Koopman, 1979) the nearest eastern island.

When Andersen (1912: 825) put *D. magna* down as a subspecies of *moluccensis* he did so on the basis of strong overlap in measurements of the skulls (greatest lengths 58.5-60.5 for *moluccensis* and 59.2-63.8 for *magna*). He did not separate males and females, in his measurement ranges. Nevertheless, forearm length ranges in his *moluccensis* and *magna* specimens (133.5-146 and 146-152.5, respectively) hardly overlap, but this he attributed to incomplete ranges due to the small numbers of specimens available to him. From our Table 2 it is clear that overlap does exist between what are now considered to be typical *moluccensis* and *magna*, except in forearm length ranges in females. Our reason for separating the two, for the moment, is the following. *Dobsonia moluccensis* is based on a single, immature specimen from Ambon. Andersen (1909, 1912) extended the concept of the species to include specimens from Buru, Ceram and from the Aru Islands. We have not seen all Andersen's specimens (16, of which ten adults, seven with skulls extracted) but there were evidently only very few adult specimens per island and possible differences between the populations from the various islands, e.g. in size ranges and in dimensional ratios, were not apparent. The situation has hardly changed. There are still only very few adult specimens from each of the mentioned islands in collections. As has been put forward before (Bergmans, 1978) it can be doubted whether *moluccensis* populations from the northern Moluccas are indeed more closely related to those from the Aru Islands, than each of these population groups to those from mainland New Guinea.

If we were to recognize *moluccensis* and *magna* as subspecies of the same species, as Andersen (1912) proposed and which has been widely followed, it would at least seem wise to restrict the name of the typical subspecies to the populations from Ambon (and possibly Ceram and Buru). The present authors feel that available data on typical *moluccensis* are far too few to allow for definite opinions regarding the relationships of typical *moluccensis* with *magna* or with its relatives from the Aru Islands, and therefore retain, for the moment, both taxa as valid species. The same type of problem will arise time after time when some island or island group yields specimens allied to *moluccensis* and *magna* in numbers too small for sound analysis. In such cases, the specimens should be left unnamed but described in full. It is not difficult to think of possible solutions to the problems posed by the complicated geography and related taxonomical and other variation within *Dobsonia*, but it does not seem justified to accept certain solutions as long as they are not supported by sufficient material evidence.

Numbers of specimens from islands east of New Guinea referred to *pannietensis* are small but strongly support a consistent dimensional gap with *magna* from mainland New Guinea (see Bergmans, 1979; Koopman, 1982). *D. anderseni* Thomas, 1914 from the Bismarck Archipelago is known from very few specimens per island (see Table 2), for which reason Bergmans (1975a, 1979) saw no other choice than to retain it as a valid species. Smith & Hood (1981) mention many recently collected specimens - be it only from the two larger islands - which have, however, not yet been described. It is not stated whether the forearm length range they give (115.1-134.8, mean 125.4; both sexes) relates to those specimens only or also include data from other collections and/or from the literature. Koopman (1982) argues that *anderseni* is a subspecies of *moluccensis* on the basis of dimensional intermediates from the islands of Bagabag, Umboi and Sakar. We do not feel that the evidence presented by him, based on few unsexed skulls only, is conclusive on the question involved and prefer to leave the original taxonomical concept unchanged, pending further evidence. One of our criticisms is that overlap cannot be assumed on the basis of unsexed specimens: overlap between measurements of males belonging to small species A with measurements of females belonging to

Table 2. Forearm lengths and greatest skull lengths in mm in adult specimens of *Dobsonia* species originally or subsequently assigned to the *moluccensis* group *sensu* Andersen, 1909. The specimens here united under *?moluccensis* and *anderseni* are listed per island; *pannietensis* are listed per island group.

Species and distribution		♂♂						♀♀						sex unknown			
		f.a.l.			g.s.l.			f.a.l.			g.s.l.			f.a.l.		g.s.l.	
		n	m	min-max	n	m	min-max	n	m	min-max	n	m	min-max	n	min-max	n	min-max
chapmani Rabor, 1952	Philippines	16	125.7	120.4-129.8				8	126.9	123.9-130.7							
					9	52.8	49.9-55.8				6	52.3	47.6-54.7				
exoleta Andersen, 1909	Sulawesi	20	113.9	106.0-124.3				12	116.2	105.0-124.4							
					16	51.3	47.6-54.6				2		46.1-50.4				
moluccensis (Q.&G., 1830)	Ambon							4	128.3	120.1-136.9							
											2		55.4-57.4				
?moluccensis	Ceram	1		145				3	138.7	136.7-141.0				1	140.0	1	56.7
					1		61.8				3	56.6	55.7-57.7				
?moluccensis	Aru Islands	1		± 144													
emersa n. sp.	Schouten Islands	1		113.7				1		113.7							
					1		49.8				1	47.8					
magna Thomas, 1905	Irian Jaya	34	147.6	135.0-155.6				43	150.8	142.2-160.0							
					39	61.7	58.8-64.2				45	60.75	57.4-63.5				
anderseni Thomas, 1914	Manus Island*	2		121.1-121.6				2		121.5-131.8							
					1		54.1										
	Ponam Island							1		128.8							
											1		50.5				
	Emirau Island							1		102.0							
											1		44.5				
	New Ireland													1	129.3		
	Tabar Island							1		125.7							
											1		51.9				
	Lihir Island	1		126.7				1		118.6							
	Boang Island							1		125.4							
	New Britain	1		124.7							1		53.4			1	52.9
					1		51.7							2	113.7-118.0		
	Duke of York Island																
	Umboi (= Ruk) Island	1		125.0													
					1		54.7									3	51.8-54.7
	Bagabag								119.0	115.4-124.6							
pannietensis (De Vis, 1905)	D'Entrecasteaux Islands	10	118.4	113.4-121.8				6			2		51.9-52.1				
					8	53.3	52.1-55.1		116.5	112.4-120.3							
	Louisiade Archipelago	11	115.9	113.0-120.3				8			4	50.1	49.3-50.7				
					12	51.55	50.3-53.4		113.5	110.9-116.0							
	Woodlark Island	3	112.8	110.4-114.2				3			3	47.3	46.5-47.7				
									105.8	102.7-107.7				2	109-112		
	Trobriand Island							3			3	46.0	45.2-46.7			2	47-48

* The ♂with f.a.l. = 121.1 and g.s.l. = 54.1 is the type specimen of the species.

large species B does not necessarily imply overlap of measurement ranges in A males and B males, nor in A females and B females, mutually (compare Bergmans, 1975b). In this context it is interesting to note that the sex of adult skulls and mandibles of *Dobsonia* specimens of the *moluccensis* group *sensu* Andersen may after all be determined. Bergmans (1979) figured upper and lower teeth row outlines of *D. pannietensis* and *D. exoleta* Andersen, 1909 to indicate a supposed difference between the two species. In the mean time it has appeared that this difference is of a sexual nature rather than taxonomical: the figured specimen of *pannietensis*, with relatively large canines, is a male, while the figured specimen of *exoleta*, with relatively small canines, is of unknown sex but most probably a female.

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