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A NEW FRUIT-BAT (*PTEROPUS RAYNERI* GROUP) FROM THE SOLOMONS.

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For several months in 1927 Mr. G. A. V. Stanley, B.Sc., then Demonstrator in Geography at the University of Sydney, was stationed on Rennell Island, where he was sent by the University, at the request of the British Government, to study the geology of that remote and seldom visited locality. Consulted by Mr. Stanley regarding tropical conditions and equipment, I suggested that he might take a collecting can on behalf of the Trustees of the Australian Museum, with a view to securing mammals, birds and reptiles from a locality otherwise inaccessible to the Museum's resources.

After some very natural hesitation, actuated by the difficulties of landing, and uncertainty as to camping conditions and the attitude of the natives, Mr. Stanley very kindly agreed to add to his gear a large can of spirit for general collecting purposes.

Amongst the small but interesting collection subsequently received was a single adult fruit-bat which proved of exceptional interest in regard to its group affinities, and shows characters warranting its description as a new species.

Pteropus rennelli *sp. nov.*

Diagnosis.—Similar to *Pteropus cognatus* Andersen 1908, of San Christoval, the extreme eastern species of the *rayneri* group, which is characterised by the uniformly brownish back and light mantle, as opposed to the tricoloured backs of others of the group; also similar in having the coronoid height of the mandible slightly more than the length of c-m_3, instead of definitely less.

Differentiated from *cognatus* by the comparatively longer rostrum, and smaller tooth-rows (markedly shown in the reduced size of m^1); also by having the tibia very sparsely, instead of thickly clothed above, and entirely naked below, instead of hairy for its proximal half. The marked elongation of the 2nd-5th metacarpals apparently also distinguishes it from *cognatus,* while the

crown and sides of the head are lighter than, instead of being similar to, the back. Forearm, adult female, 121 mm. Habitat: Rennell Island, off the Eastern Solomons.

Skull.—Rostrum comparatively longer and narrower than in *cognatus,* the holotype having a greater rostral length than that of an adult *cognatus* which has a greater palation to incisive foraminal length (see measurements, p. 197); the front of the orbital cavity approximately vertically above the front of m^1, instead of above the posterior half of p^4 as in *cognatus.* Coronoid height (25·8 mm.) of the mandible definitely longer than the lower tooth-row (c-m_3 24 mm.), instead of being about subequal as in *cognatus.* Sagittal crest well developed and high anteriorly.

Dentition.—Upper and lower rows smaller than in *cognatus,* the premolars and molars of both series of the adult female being individually shorter and narrower than the minimum dimensions of two, presumably, immature males, listed for the allied species by Andersen (see measurements, p. 197), excepting only in the widths of m^2 and p^1, which are subequal in the two forms. The length (4·8 mm) and width (2·5 mm.) of m^1 displays the greatest reduction in comparison with the length and width (5·6 and 3 mm.) of that tooth in the immature males of *cognatus,* the difference being exemplified by the relative dimensions across m^1 externally in the two forms. The considerable reduction of m_3 noted for *cognatus* by Andersen, is even more pronounced; m^2 is also more reduced in comparison with the allied species, in which the tooth is described as being slightly smaller than in *Pt. hypomelanus.*

Palate-ridges.—Arrangement as in *Pt. rayneri,* without special modifications, and presumably as in *cognatus.* Formula, 5 + 5 + 3.

Digits and other external characters.—The metacarpals of all digits are remarkably elongate, and it is unfortunate that Andersen did not record the digital dimensions of *cognatus* (apparently because of immaturity) as there is little doubt that the relative proportions of the 2nd-5th metacarpals would further separate the allied forms. For example, Andersen stated that *cognatus* was "probably smaller than *Pt. rayneri,*" estimating the adult forearm as "at least 121 mm.", whereas the fully adult female *rennelli* with a forearm of 121 mm. has a 2nd digit metacarpal length of 69 mm. compared with 70 mm. for the maximum-sized specimen of the much larger *rayneri* with a forearm of 140·5 mm. Similarly, the length of the 3rd metacarpal of the holotype is subequal to the maximum length given for that metacarpal in *rayneri*; the lengths of the 4th and 5th metacarpals are intermediate between the extremes listed for the much larger species.

Ear comparatively long, well exposed, narrowly rounded off at the tip and the outer margin faintly concave in its upper fourth;

upper half of inside naked, lower half sparsely haired; externally the inner and outer bases are hairy. Membranes arising about 17 mm. apart from sides of back.

Fur.—Adpressed on back as in *cognatus* but apparently longer, the approximate length of the hairs being 15-18 mm. as opposed to 11-12 mm.; hairs of mantle 17 mm.: shorter hairs on the belly about 11-13 mm., interspersed with longer ones of about 20 mm. Width of the furred area of the middle of the back about 60 mm., including the extension onto the wing-membranes. Tibia quite differently furred from that of *cognatus*: above it is thinly, instead of thickly clothed for the proximal two-thirds, the hairs being thicker on the membrane, on the inner side, than on the tibia; below it is entirely naked, even the distal end of the thigh being unhaired, instead of the proximal half being hairy as in *cognatus*. Humerus, above, covered with short adpressed hairs for its proximal two-thirds; its lower third, the elbow, and proximal third of forearm sparsely covered with fine hairs. Below the forearm is naked, but the antebrachial membrane, and the lateral along the outer three-quarters of the forearm and between the humerus and femur has a covering of scanty but longish hairs.

Colour.—General ground colour of back an uneven tone varying between prout's and mummy brown (Ridgway, 1912), grizzled owing to the pale auburn and buffy hair-tips, and the admixture of greyish hairs, which is most pronounced immediately behind the mantle. The rump appears very slightly lighter than the middle of the back owing to an increase in the buffy tone, but it does not approach the coloration of the mantle. Mantle shining ochraceous tawny, washed with palish tawny olive, the colour deepening to cinnamon brown on the sides of the neck. Basally the fur of back is about blackish-brown 3, lightened by an intermingling of prout's brown and greyish hairs; below, the basal colour is about light seal brown in the centre of the belly, becoming lighter posteriorly. General tone of undersurface prout's brown, but decidedly darker in the centre of the chest and belly, which is of a blackish vandyke shade owing to an intermingling of blackish-brown and shining, coppery, vandyke hairs; the sides are washed with shining dresden brown. Cheeks greyish-brown tinged with fawn: crown palish smoke grey washed with chamois, changing to pale honey-yellow on the nape; basal colour on crown grey intermixed with sparse brownish hairs. The sparse hairs on the upper side of the tibia are blackish-brown with the longish hairs on each side of a shining yellowish auburn. Hairs beneath membrane shining tawny russet.

The colour of the head, though doubtless subject to individual variation, is apparently quite different from that of all other species of the group; this difference is most marked in the crown, which is palish smoke grey washed with chamois as opposed to

the range shown by Andersen[1] for the group, from "tawny ochraceous" (*chrysoproctus*) to "blackish seal-brown" (*grandis*).

Measurements.—On p. 197.

Specimen examined.—One, the holotype female, No. M.4217 in the Australian Museum collection, collected and presented by Mr. G. A. V. Stanley, B.Sc.

Range.—Rennell Island, situated about 90 miles south-westward of San Christoval Island, Eastern Solomons. The species therefore occurs at the southern limit of the range of the *rayneri* group in the Solomons, the range extending westwards through the Solomons to the Moluccas.

Specific affinities.—This somewhat complex species is linked with its nearest ally *cognatus* in lacking the tricoloration of the back, which is present in all others of the *rayneri* group (variable in *chrysoproctus*), as well as in having the coronoid height slightly greater instead of less than the length of $c - m_3$. It is distinguished from *cognatus* by having the tibia sparsely instead of thickly clothed above (as in the much larger Moluccan *chrysoproctus*), and in lacking the partial furring below; also by the smaller tooth-rows and marked elongation of the 2nd-5th metacarpals. The comparative reduction of the rostrum in relation to the palation to incisive-foraminal length, strangely enough, accords with that of the considerably larger *rayneri,* instead of with *cognatus.*

Group affinities.—Though the extent of the rostral reduction conforms to Andersen's definition of the *rayneri* group, the reduction of i_1, m_2, and m_3 is practically as described in *Pt. lombocensis* of the closely allied group of that name. It is noteworthy that in *rennelli* and an authentic specimen of *rayneri* the size of i_1 does not agree with the proportions cited by Andersen ($\frac{2}{3} - \frac{2}{5}$ of i_2) for their group, being smaller and more in accord with those given for the *lombocensis* group ($\frac{1}{4} - \frac{1}{6}$ of i_2), and it therefore appears that the relative bulk of the lower incisors does not supply a definite diagnostic character for either group. Andersen has stated that the shortening of the rostrum is further developed in the *lombocensis* group, but the comparative dimensions show *cognatus* to have a practically similar development of the rostrum to that of *lombocensis.* In view of this, and the occurrence of *chrysoproctus* within the range of the *lombocensis* group, it would seem that the allied groups are far more interrelated than Andersen's definition of them would suggest. However, *cognatus* is clearly distinguished from *lombocensis* by the lesser reduction of m_2, greater mandibular length, and proportion of coronoid height to length of $c\text{-}m_3$, and in having the underside of the tibia partially

[1] Andersen.—Cat. Chiroptera, Brit. Mus., i, 1912, pp. 259 and 261.

EXTERNAL MEASUREMENTS OF *Pteropus rennelli, rayneri,* and *lombocensis.*

	Pt. rennelli Holotype Adult ♀ A.M. No. M.4217	*Pt. rayneri* 3 ad. Incl. cotypes Brit. Mus.		*Pt. lombocensis* 7 ad. Incl. type Brit. Mus.	
	mm.	Min. mm.	Max. mm.	Min. mm.	Max. mm.
Forearm	121	137·5	140·5	113	122
Pollex, total length, c.u.	53	57	63	46	50·5
,, metacarpal	12·2	11·8	12·8	10·2	11
,, 1st phalanx	25·5	29	34·2	22	25·8
2nd digit, metacarpal	69	67	70	52·5	58
,, 1st phalanx	17·5	16·7	18·7	12	14·8
,, 2nd–3rd phalanx, c.u.	14·7	13·2	15·2	13·5	15·5
3rd digit, metacarpal	92	89	92	75	81
,, 1st phalanx	63·5	68	69	51	56·5
,, 2nd phalanx	92	96·5	101	79	84
4th digit, metacarpal	87·5	85·2	90·5	72·5	79
,, 1st phalanx	52	54·2	58·5	43	47·5
,, 2nd phalanx	49·8	55	55·5	44·5	50·5
5th digit, metacarpal	94	92·5	96·8	78·5	85
,, 1st phalanx	38·5	40·2	43·7	33·5	36·5
,, 2nd phalanx	37·5	41	41·5	26·5	32·5
Ear, length from orifice	23	26	—	—	27·5
,, max. width, flattened	14·3	16	—	—	15·7
Front of eye to tip of muzzle	22·7	24	—	—	20
Lower leg	53·5	59·2	63·5	49	52
Foot, c.u.	39	40·5	—	37	41
Calcar	13	19	—	—	13·2

MEASUREMENTS OF SKULLS AND TEETH OF *Pteropus rennelli, cognatus,* and *lombocensis.*

	Pt. rennelli Holotype Adult ♀	*Pt. cognatus* San Christoval Skull: ad. ♂ Teeth: 1 ad. 2 imm.		*Pt. lombocensis* Skulls: 7 ad. Teeth: 7 ad. (Incl. type)	
Skull.	mm.	Min. mm.	Max. mm.	Min. mm.	Max. mm.
Total length to gnathion	c. 58·5	—		—	55
Palation to incisive foramina	27·5	28·7		—	25·7
Front of orbit to tip of nasals	18	17		14·5	16
Width of brain-case at zygomata	21·3	22		20·2	22
Zygomatic width	33	33·2		29·7	31·2
Width across m^1, externally	16·4	18		15	17
Lachrymal width	—	13·2		11	12·5
Width across canines, externally	12·6	14		11·2	12·1
Posterbital constriction	7·3	7·2		7	8
Interorbital constriction	8·3	8·7		7·2	8·8
Width of mesopterygoid fossa	7·2	7·2		7·2	7·4
Width between p^4–p^4, internally	10·5	10·2		8·8	10·6
Width between cingula of canines	7·5	7		5·7	6·8
Orbital diameter	12	13		12	12·5
Mandible, length	45·3/46	47		41	42·7
,, coronoid height	25·8	26		21·2	23
Upper teeth, c–m^2	21·8	23		20	21·2
Lower teeth, c–m_3	24	25·5		22·2	23·7
m^1, length	4·8	5·6	5·7	5·2	5·6
,, width	2·5	3	3·1	2·8	3
m^2, length	1·8	2·2	2·5	1·3	1·8
,, width	1·8	1·8	2	1·3	1·8
m_3, length	1·7	1·8	1·8	1·1	1·6
,, width	1·5	1·6	1·6	1·1	1·6

furred instead of naked. Furthermore, *rennelli* is definitely separated from *lombocensis* by its comparatively larger skull, with a well-developed sagittal crest, comparatively longer rostrum, relationship of the coronoid height to the length of c-m_3, and in the digital dimensions, a specimen of *rennelli* with the forearm 1 mm. shorter than the maximum of *lombocensis*, having the 2nd-5th metacarpals 8·5 – 11 mm. longer.

I am indebted to Mr. Stanley for the opportunity to describe this very distinct if complex species, which throws such an interesting light upon the interrelationship of its nearest allies, as well as on the closely allied *lombocensis* group.