

Two new armoured spiders of the genus *Paculla* Simon, 1887 from Sarawak (Araneae: Pacullidae)

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Introduction

In a recent paper (Bourne, 1980) I have revised the type specimens of the family Pacullidae described by Thorell and arranged the family into two genera: *Paculla* Simon and *Perania* Thorell. The three other known pacullids described by Shear (1978) remain within the genus *Paculla*.

In this paper I describe two new species of *Paculla* collected during the Royal Geographical Society/Sarawak Government expedition to Gunung Mulu. I am most grateful to Mr F. Wanless of the British Museum (Natural History) for having allowed me to study this material.

Family PACULLIDAE Simon

Genus *Paculla* Simon, 1887

***Paculla wanlessi* sp. n. (Figs. 1-10)**

Material: Sarawak, Gunung Mulu National Park, R.G.S./Sarawak Government Mulu Expedition: ♂ holotype, BMNH. 1980.8.18.9, ♀ paratype, BMNH. 1980.8.18.24, 18 paratypes (7♂ and 11♀), BMNH. 1980.8.18.10-19, 7 females with cephalothorax and abdomen separate, 1♀ without abdomen, 7 juvenile specimens and 8 embryonic forms? Melinau gorge, 150 m, Lubang Rendah Harimau (Tigerfoot Cave), total darkness under lumps of rotting limestone, coll. F. Wanless, 30 May 78. ♂ paratype, BMNH. 1980.8.18.30, environs of camp 1, 150 m, ecological plot 2, mixed dipterocarp forest, leaf litter, coll. F. Wanless 24 May 78. ♀ paratype, BMNH. 1980.8.18.29, environs of base camp, 65 m, alluvial forest, litter, coll. F. Wanless, 18 June 78. paratype ♀, BMNH. 1980.8.18.25, mixed dipterocarp forest, soil cores, site C, 220 m, coll. M. Collins, 4 Feb. 78.

♀ paratype, BMNH. 1980.8.18.28, +1 immature pacullid, mixed dipterocarp forest, soil cores, site D, 500 m, coll. M. Collins, 2-5 Feb. 78. ♀ paratype, BMNH. 1980.8.18.26-27, +1 immature pacullid, mixed dipterocarp forest, soil cores, site B, 130 m, coll. M. Collins, 1 Feb. 78.

All material in British Museum (Natural History) except 2♂, 2♀ paratypes in Geneva Natural History Museum, and 2♀, 2♂ in Sarawak Museum, Kuching.

Etymology: The species epithet is dedicated to the collector, Mr F. Wanless, British Museum (Natural History).

Male holotype: Total length 4.08 mm, carapace length 1.76 mm, carapace width 1.28 mm, maximum height of carapace 0.86 mm.

Cephalic region moderately raised (Fig. 1). Carapace dark reddish brown, covered with large warts with a strong hair arising from the middle of each (Fig. 2). Eyes, large with anterior and posterior laterals touching: laterals slightly elevated. Posterior medians separated by their diameter (Fig. 2). Sternum with irregularly shaped raised surfaces (Fig. 3) from which arise long robust hairs, sternal apophysis well developed. Abdomen (Fig. 4) with reddish brown scutum densely covered in short hairs. Lateral abdominal bands strongly sclerotized as in ♀ (Fig. 8), ventral plates as in ♀ (Fig. 9), but with central genital pore near posterior border of pulmonary plate.

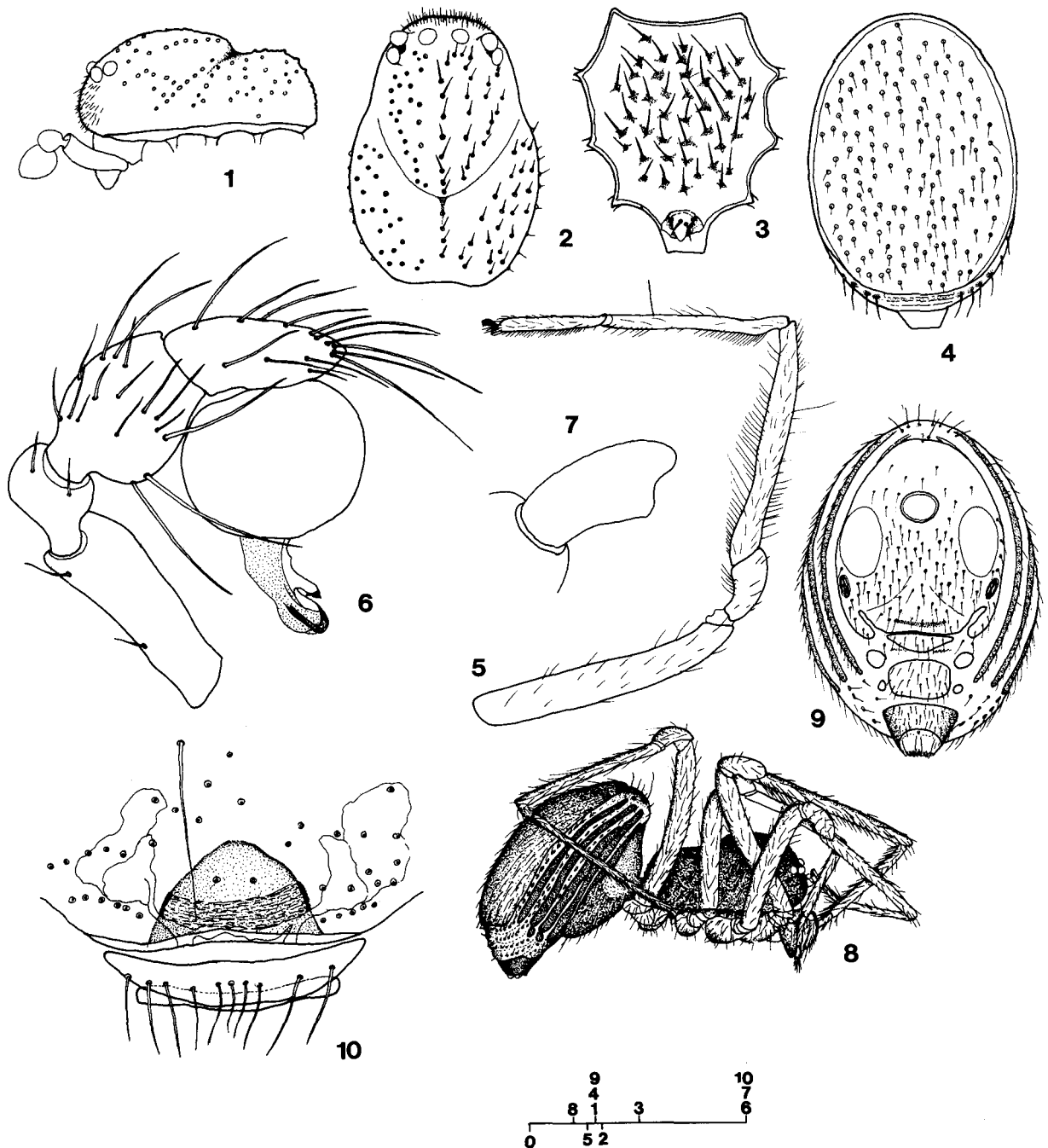
Leg measurements (mm):

	I	II	III	IV
Femur	2.00	1.58	1.50	2.06
Patella	0.58	0.48	0.44	0.50
Tibia	1.72	1.50	1.20	1.84
Metatarsus	1.40	1.20	1.04	1.20
Tarsus	0.76	0.68	0.72	0.72
Total	6.46	5.44	4.90	6.32

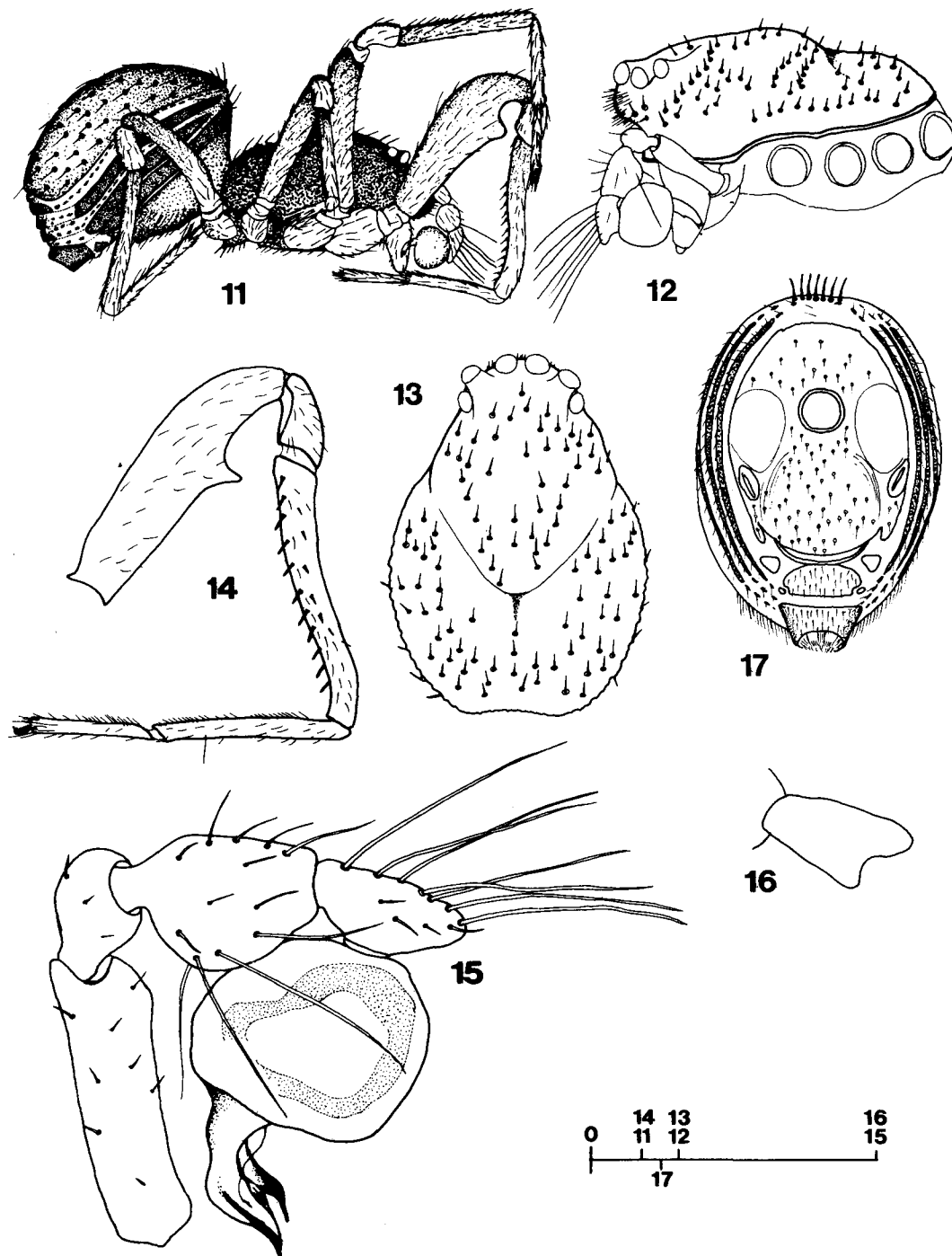
Apart from the irregular distribution of hairs, no modification of leg I (Fig. 5). Male palp as in Fig. 6. Detail of tarsus of male palp: Fig. 7.

Female paratype: Total length 4.80 mm, carapace length 1.92 mm, carapace width 1.28 mm, maximum height of carapace 0.80 mm.

General appearance as in Fig. 8. Relative dimensions of ventral plates as in Fig. 9. Vulva, after prolonged clearing in lactic acid: Fig. 10.



Figs. 1-10: *Paculla wanlessi* n.sp. 1 Male carapace, lateral view; 2 Male carapace, dorsal view; 3 Male sternum, ventral view; 4 Male abdomen, dorsal view; 5 Male leg I, lateral view; 6 Male palp, lateral view; 7 Male palpal tarsus, dorsal view; 8 Female, lateral view; 9 Female abdomen, ventral view; 10 Female vulva, ventral view. (Scale = 0.5 mm)



Figs. 11-17: *Paculla mului* n.sp. 11 Male, lateral view; 12 Male carapace, lateral view; 13 Male carapace, dorsal view; 14 Male leg I, lateral view; 15 Male palp, lateral view; 16 Male palpal tarsus, dorsal view; 17 Female abdomen, ventral view. (Scale = 0.55 mm)

Remarks: Although apparently very abundant in Lubang Rendah Harimau, this spider was also captured outside caves at low altitude and must therefore be considered as at the most a troglophilous species. The legs of this species are much finer and longer than any congener.

***Paculla mului* sp. n.** (Figs. 11-17)

Material: Sarawak, Gunung Mulu National Park, R.G.S./Sarawak Government Mulu Expedition, M. Collins Collection: ♂ holotype, BMNH. 1980.8.18.1, ♀ paratype, BMNH. 1980.8.18.2, upper montane forest, soil cores, site J, 1930 m, 19 March 78. Paratypes 1♂, 1♀, BMNH. 1980.8.18.4-5, lower montane forest, soil cores, site G, 1310 m, 18 Feb. 78. ♂ paratype, 1 immature ♀?, BMNH. 1980.8.18.7-8, lower montane forest, soil cores, site H, 1650 m, 19 Feb. 78.

All material in British Museum (Natural History) except 1♂ paratype in Geneva Natural History Museum, and 1♂, 1♀ paratypes in Sarawak Museum, Kuching.

Etymology: The species epithet is a geographical indicator.

Male holotype: Total length 4.16 mm, carapace length 1.96 mm, carapace width 1.4 mm, maximum height of carapace 0.70 mm.

General appearance as in Fig. 11. Cephalic region raised (Fig. 12) protruding anteriorly over chelicerae. Dorsally as in Fig. 13, reddish brown covered with warts from each of which arises a short sturdy hair. Eyes large, situated as in Fig. 13. Sternum not distinguishable from preceding species, sternal apophysis prominent, seen in profile in Fig. 11. Abdomen with 3 or 4 sclerotized lateral plates (Fig. 11); dorsal and ventral plates typical for genus. Hairs on abdomen clearly shorter than in preceding species. First pair of legs modified, femur with subterminal tooth (Fig. 14). A row of eleven black spines on tibia I. All leg segments reddish brown except for yellow patellae.

Leg measurements (mm):

	I	II	III	IV
Femur	1.72	1.42	1.28	1.82
Patella	0.46	0.46	0.44	0.46
Tibia	1.28	1.34	1.04	1.60
Metatarsus	0.72	1.00	0.94	1.42
Tarsus	0.36	0.62	0.60	0.60
Total	4.54	4.84	4.30	5.90

Male palp as in Figs. 15-16. Note row of long sturdy hairs on tarsus.

Female paratype: Total length 3.60 mm, carapace length 1.68 mm, carapace width 1.10 mm, maximum height of carapace 0.66 mm.

Differs from male in not having modified 1st legs. Morphology of ventral abdominal plates as in Fig. 17. Genital region as in Fig. 17. Internal morphology of vulva hardly discernible.

Remarks: This species differs from *P. wanlessi* not only morphologically but also it is apparently a high altitude species whereas *P. wanlessi* is found either in caves or in forest litter at low altitudes.

Post scriptum

Concerning the four new pacullids recently described by Deeleman-Reinhold (1980) it is comforting to note that the two species of the genus *Paculla* from Borneo are clearly distinguishable from the above two new species. From the descriptions given and the drawings of the male palps the two species have been justifiably included within the genus *Paculla* as revised by Bourne (1980).

References

- BOURNE, J. D. 1980: Revision of Thorell's type species of the family Pacullidae (Araneae) in the Museo Civico di Storia Naturale di Genova. *Annali Mus.civ.Stor.nat. Giacomo Doria* 83: 249-260.
- DEELEMEN-REINHOLD, C. L. 1980: Contribution to the knowledge of the South-east Asian spiders of the families Pacullidae and Tetrablemmidae. *Zoöl.Meded. Leiden* 56(5): 65-82.
- SHEAR, W. A. 1978: Taxonomic notes on the armored spiders of the family Tetrablemmidae and Pacullidae. *Am.Mus.Novit.* 2650: 1-46.
- SIMON, E. 1887: Observations sur divers arachnides: synonymies et descriptions. *Annls Soc.ent.Fr.* (6) 7: 194.