

More about *Portia* (Araneae: Salticidae)

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Summary

Additional information on the salticid spider genus *Portia* is given. The female of the type species *P. schultzi* Karsch, 1878, is found to be identical to *P. alboguttata* (Lawrence, 1938) (*syn. nov.*). *P. cazoboensis* Wanless, 1978 is synonymised with *P. kenti* Lessert, 1925 (*syn. nov.*). The female of *P. albimana* (Simon) is described for the first time, and a new species *P. orientalis* is described. New records are given for *P. schultzi*, *P. kenti*, *P. africana*, *P. albimana*, *P. assamensis*, *P. labiata* and *P. fimbriata*. A distribution map is provided for *P. schultzi*.

Introduction

In recent years, for various reasons, interest has been growing in the study of the salticid spider genus *Portia* Karsch.

In 1974, the authors brought back from Kenya, two immature specimens, identified some two years later as *Portia schultzi* Karsch. Interest was aroused when, in captivity, it was observed that these salticids constructed quite large sheet webs and were seen walking, generally, on the under side of these webs. Furthermore these webs were seen to be used in prey capture. At that time, these phenomena had not previously been recorded for salticid spiders, although there are a few records of *Portia* entering the webs of other spiders to feed. The identification came about, since at that time, quite by chance, F. R. Wanless was carrying out taxonomic studies on the genus *Portia* (Wanless, 1978).

More recently L. M. and R. R. Forster, and R. R. Jackson in New Zealand and A. D. Blest in Australia have been studying *Portia* from other points of view, including behaviour and eye structure. Results from

these studies are now beginning to emerge (Forster, 1982; Jackson, 1982; Jackson & Blest, 1982). The same sort of web-building behaviour observed by us has also been observed by R. R. Jackson with *Portia fimbriata*, and certain biological aspects have been examined in more detail by R. R. Jackson and A. D. Blest, and also by L. M. Forster. From SEM photographs, the Forsters have pointed out to us (*pers. comm.*) a pendulous structure occurring in the middle of the hairs of leg IV — and leg IV only — on *Portia* species. This structure has not so far been detected on any other salticids.

The scope of this paper is to record some additional taxonomic information that has come to light since 1978, together with new records and some notes of a general nature. Descriptions of one new species and the females of two other species are also included.

Portia schultzi Karsch (Figs. 1, 2, 3)

Portia schultzi Karsch, 1878: 774, ♀. Wanless, 1978: 88, fig. 1 A-G.

P. schultzi: Simon, 1901a: 402, 403. Petrunkevitch, 1928: 182. Roewer, 1954: 934. Bonnet, 1958: 3767. Roewer, 1965: 12. Prószyński, 1971: 461.

Brettus martini Simon, 1900: 31. Roewer, 1954: 934. Bonnet, 1958: 3767.

Linus lesserti Lawrence, 1937: 254, fig. 22, ♂. Roewer, 1954: 935. Bonnet, 1957: 2482. Roewer, 1965: 17, fig. 16 a-c. Prószyński, 1971: 425. Wanless, 1978: 88 (= *P. schultzi*).

Linus alboguttatus Lawrence, 1938: 520, ♀. Roewer, 1954: 935; 1965: 19, fig. 19. Prószyński, 1971: 425. Cutler, 1976: 132.

Portia alboguttata: Wanless, 1978: 96, fig. 5 C, D, E, H, I. New synonymy.

In his revision, Wanless suspected that the female holotype from Port Natal, South Africa and our female from Kilifi, Kenya, 1974 were both subadult. In August 1977 we returned to Kilifi and collected further specimens of *P. schultzi*. One male was mature when collected, but all the females were immature. Some three months later, the females all matured and upon examination proved to conform to *P. alboguttata* (Lawrence), a species quoted in Wanless (1978) as having unknown male. Thus Wanless's conjecture was substantiated and, in fact, *P. alboguttata* is synonymous with *P. schultzi*.

In Kenya, we have found *P. schultzii* near the coast from Malindi to the Shimba Hills. They have been found by us, mainly, in the extensive, thick white webs of the diplurid, *Ischnothele karschi* (Bös. & Lenz). These webs are usually constructed in shrubs and low trees, where, in the course of time, the webs gather many small pieces of dead debris from the plants. The colour and general appearance of *P. schultzii* makes it extremely difficult to distinguish the spider from a bit of debris, even when one is studying a web very carefully. Often a web, thought to be free of any *P. schultzii*, upon being shaken has produced one or two specimens. Typically we have found only one specimen, rarely two in a diplurid web, and roughly one diplurid web in three occupied by *P. schultzii*. In captivity *P. schultzii* has been seen to make its own resting web within the structure of a diplurid web. We have kept two other species of *Portia* in captivity, namely *P. durbanii*

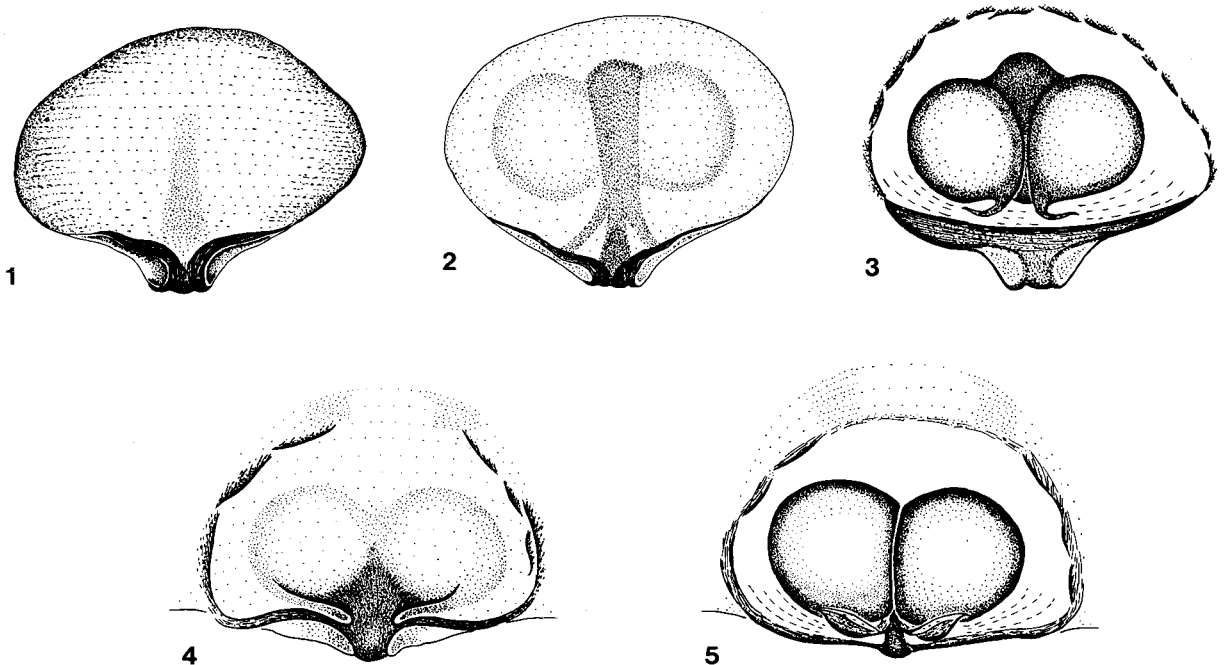
Peckham & Peckham and *P. labiata* (Thorell). The former made no web at all, whilst the latter made smaller webs than *P. schultzii* and used them less. But we do not know how these spiders live in the wild.

On the other hand we have collected one specimen of *P. schultzii* from an abandoned web of *Cyrtophora citricola* (Forskål), another from a tree trunk, from a pile of dead sticks and from the wall of a house. In one instance we found a specimen in, what appeared to be, its own web under an overhang on a building.

Description of female

The general description of this female is essentially that given in Wanless (1978) for *P. alboguttata*. Various measurements are as follows:

Total length: 8.2 mm. *Carapace*: Length 3.5 mm,



Figs. 1-3: *Portia schultzii* Karsch, female. 1 Epigyne, ventral view; 2 Vulva, ventral view; 3 Vulva, dorsal view.

Figs. 4-5: *Portia albimana* (Simon), female. 4 Vulva, ventral view; 5 Vulva, dorsal view.

cephalic part 2.0 mm, thoracic part 2.7 mm, width 3.1 mm, maximum height 2.0 mm. *Abdomen*: Length 4.7 mm. *Eyes*: In three rows. Ratios of transverse diameters (), interocular distances and clypeus:

(18)	78	(18)
20		20
(13)	70	(13)
20		20
(16) 5 (34) (34) 5 (16)		
20	20	

These ratios convert to AM:AL:PM:PL = 17:8:6.5:9 which agree quite well with 17:8:6:8 quoted for *P. alboguttata*. *Legs*: Measurements in mm:

Leg	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	3.1	1.3	1.7	2.1	1.1	9.3
II	2.6	1.2	1.9	2.1	1.0	8.8
III	2.3	1.2	1.7	2.2	0.9	8.3
IV	3.1	1.4	2.8	4.0	1.3	12.6

Metatarsi and tarsi very thin compared with other leg segments. Thickness (diameter:length) for metatarsus I is about 1/10 compared with 1/3 for tibia I. *Epigyne and vulva*: Figs. 1-3. These agree very closely with those in Wanless (1978: fig. 5 C, H, I).



Map 1: Distribution of *Portia schultzei*.

New records (including new records for *P. alboguttata*)

- FRENCH GUINEA: N° Zérékoré, 1 ♀, 18 Jan. 1951 (Su Herold Olsen) Zool. Mus. DK., Copenhagen.
- MALAWI: Chintheche, 30 Dec. 1975 (R. Jocqué) MT.148. 044, MRAC, Tervuren.
- MALAWI: Mpepwe, Sud Lac Malawi, prés Monkey Bay, 24 Feb. 1976 (R. Jocqué) MT.148. 102, MRAC, Tervuren.
- KENYA: Shimba Hills, 13 Sept. 1977 (J. & F. Murphy, vial 2462).
- MALAWI: Lilongue, 1 ♂, 10 Nov. 1977 (R. Jocqué) MT.153. 065, MRAC, Tervuren.
- MALAWI: Chintheche, 12 Dec. 1977 (R. Jocqué) MT.153. 689; 2 ♂, Jan. 1978 (R. Jocqué) MT.153. 159, MRAC, Tervuren.
- ZAMBIA: Lusaka, Baboon Kop, 4 Nov. 1978 (R. Stjernsvedt) MT.151. 957, MRAC, Tervuren.
- SOUTH AFRICA: Natal, Pinetown, prés Durban, Oct. 1979 (M. E. Baddeley) MT.152. 905, MRAC, Tervuren.
- KENYA: Gedi, 10 Sept. 1980 (J. & F. Murphy, vial 9600).

The distribution of *P. schultzei* (including records for *P. alboguttata*) is given in Map 1.

1♀ *P. schultzei*, Kilifi, Kenya, 21 Sept. 1977 (J. & F. Murphy, vial 5318) has been deposited at the British Museum (Nat. Hist.).

Portia kenti Lessert

Portia kenti Lessert, 1925: 339, fig. 8. Wanless, 1978: 111, figs. 14A, C, D, 15A.

P. cazomboensis Wanless, 1978: 90, fig. 2 A-D. New synonymy.

In his revision Wanless refers to two specimens of *P. kenti* and two of *P. cazomboensis*. As a result of further records for these species, in particular a pair collected by R. Jocqué in Malawi in 1977, it became clear to F. R. Wanless that *P. cazomboensis* is synonymous with *P. kenti*.

New records

MALAWI: Chitheche, ♀ ♂, Jan./Feb. 1976 (R. Jocqué) MT.147. 129, MRAC, Tervuren; (same data) ♂, MT.148. 031, MRAC, Tervuren.

Portia africana (Simon)

Linus africanus Simon, 1886: 393, ♂. Simon, 1901a: 409, 410; 1909: 412. Berland & Millot, 1941: 398-401, figs. 91, 92. Roewer, 1954: 935. Bonnet, 1957: 2482. Roewer, 1965: 16, fig. 15. Prószyński, 1971: 425. Cutler, 1976: 132. *Cocalus africanus* Thorell, 1899: 91, ♂. Simon 1901a: 407. Roewer, 1954: 934. Bonnet, 1956: 1173. Wanless, 1978: 93 (= *P. africana*).

Neccocalus africanus (Thorell): Roewer, 1965: 20, fig. 21. *Portia africana* (Simon): Wanless 1978: 93, figs. 4 A-E, 5 A, B, F, G, pl. 5b.

New records

ZAIRE: Equateur, Bamania, 1975 (P. Hulstaert) MT.148. 560, MRAC, Tervuren.

CAMEROUN: Mieri, 1 ♂, 23 Jan. 1976 (F. Puylaert) MT.148. 262, MRAC, Tervuren.

Portia albimana (Simon) (Figs. 4, 5)

Linus albimanus Simon, 1900: 33, ♂; 1901a: 409. Roewer, 1954: 936. Bonnet, 1957: 2482. Prószyński, 1971: 425. *Portia albimana* (Simon): Wanless, 1978: 107, fig. 12 A-D.

At the time of the *Portia* revision (Wanless, 1978), the female of *P. albimana* was unknown. Since that date a pair, collected by Lövendal at Villore, Madras, India, have been found by F. R. Wanless in the collection of the Copenhagen Museum.

Description of female

The general description is substantially the same as that given for the male by Wanless (1978). The white moustache on the clypeus is very noticeable. All the tibiae and patellae have fringes ventrally, densest and largest on leg I, still quite pronounced on legs II and IV, but rudimentary on leg III. On the tibiae the fringes tend to be located basally and apically, but on leg I they occupy most of the length of the tibia. Measurements as follows:

Total length: 10.7 mm. *Carapace*: Length 4.7 mm, cephalic part 2.0 mm, thoracic part 4.0 mm, width 4.0 mm, maximum height 2.9 mm. *Abdomen*: Length 6.0 mm. *Eyes*: In three rows. Ratios of transverse diameters (), interocular distances and clypeus:

(20)	98	(20)
28		28
(14)	88	(14)
27		27
(17) 7 (38) 3 (38) 7 (17)		
30	30	

Legs: Measurements in mm:

Leg	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	3.3	2.1	1.5	3.4	1.4 †	11.7
II	3.6	1.9	2.2	2.8	1.1	11.6
III	3.2	1.6	2.0	2.7	0.9	10.4
IV	4.4	1.8	3.4	5.2	1.2	16.0

Thickness of metatarsus I, 1/15; tibia I, ¼. *Epigyne and vulva*: Figs. 4, 5.

New records

INDIA: Villore, Madras, ♀ ♂ (Lövendal) Zool. Museum DK., Copenhagen.

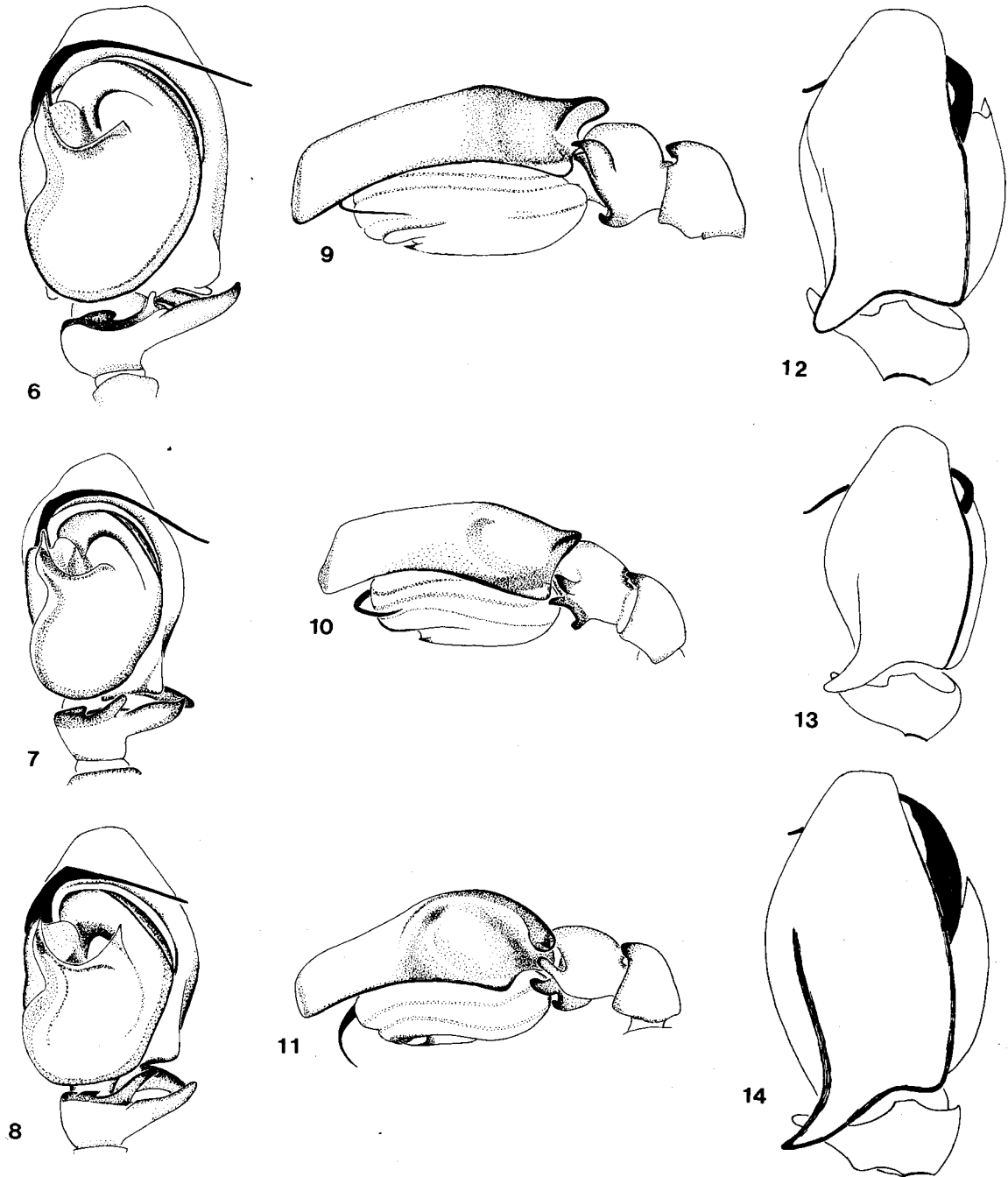
SRI LANKA: ♂, Tilg. 20 Nov. 1960 (R. Sherriffs) Zool. Museum DK., Copenhagen.

Portia orientalis sp. n. (Figs. 6, 9, 12, 16, 20)

Whilst checking some *Portia*, collected in Malaysia, against material at the British Museum, a male specimen from Hong Kong appeared to be close to, but different from *P. assamensis* Wanless. As *P. assamensis* is itself close to *P. labiata*, it was thought desirable in the description, to give a comparison between all three males. A male *P. labiata* from Layang-Layang, Malaya taken in July 1979 (J. & F. Murphy, vial 7733) and a male *P. assamensis* from Penang, taken in August 1979 (J. & F. Murphy, vial 8286) were drawn for comparison.

Diagnosis

Portia orientalis is closely related to *P. assamensis* and *P. labiata*. The chief distinguishing features in the male palp are in the shape of the embolus and in the palpal tibia. Further, there is some general



Figs. 6-8: Male left palps, ventral view. **6** *Portia orientalis* sp. n.; **7** *P. assamensis* Wanless; **8** *P. labiata* (Thorell).

Figs. 9-11: Male left palps, lateral view. **9** *Portia orientalis*; **10** *P. assamensis*; **11** *P. labiata*.

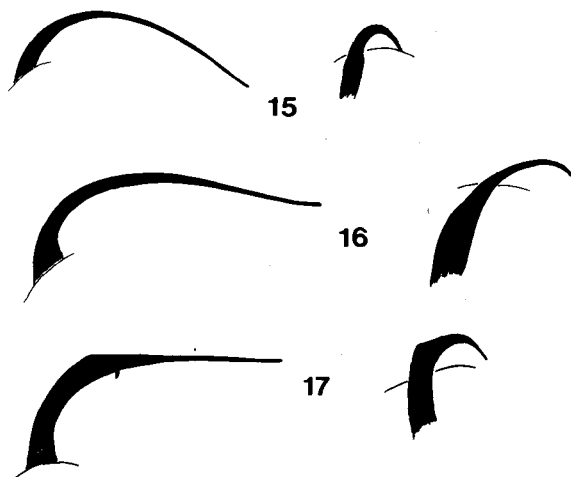
Figs. 12-14: Male left palps, dorsal view. **12** *Portia orientalis*; **13** *P. assamensis*; **14** *P. labiata*.

variation in the shape of the cymbial flange together with the nearby recess and also in the cheliceral teeth. These features are depicted in Figs. 6-21.

Male Holotype (Hong Kong, B.M. 1923. xl. 8. 4-8).

Total length: 7.6 mm. *Carapace*: Length 3.4 mm, cephalic part 1.5 mm, thoracic part 2.8 mm, width 2.7 mm, maximum height 2.1 mm; orange-brown, lighter in eye region, covered in recumbent, light orange hairs, with pronounced orange tufts near PLE (not seen in specimens of *P. assamensis* and *P. labiata* examined). There is a parallel white band from the fovea to the posterior margin and broad white, lateral, marginal bands from coxae I to coxae IV. *Eyes*: Anterior subcontiguous with apices procurved, fringed with whitish-orange hairs. Ratios for transverse diameters of eyes (), interocular distances and clypeus:—

(11)	60	(11)
13		13
(8)	51	(8)
15		15
(11)	(26)	(26)
	20	20



Figs. 15-17: Emboli, palps viewed ventrally (left) and laterally (right). 15 *Portia assamensis* Wanless; 16 *P. orientalis* sp. n.; 17 *P. labiata* (Thorell).

Clypeus: Orange, covered sparsely with fine hairs. *Chelicerae*: Parallel, orange-brown with dark longitudinal marks; 3 teeth on each margin (see Fig. 16 for comparisons). *Maxillae and labium*: Orange-brown, with inner margins of maxillae and apex of labium lighter. *Sternum*: Elongate, scutiform, yellow-brown with darker margins; densely covered with creamy-white hair and a few long, stiff brown hairs opposite coxae I-III (fewer and less pronounced than in the other two species) and none visible between coxae IV. *Abdomen*: Somewhat faded; dorsally with broad median band of light yellow-brown hair running from apex for about a third of its length; sides and the rest of the abdomen covered with dark yellow-brown hair; characteristic white hair tufts present but not so striking as those of *P. labiata*; ventrally a darkish broad, longitudinal median band runs the length of the abdomen; spinnerets, similarly coloured. *Legs*: Femora, patellae, tibiae, all of a uniform dark orange colour, with metatarsi and tarsi somewhat lighter; femora III and IV without annulations, unlike those of *P. assamensis* and *P. labiata*, the femora of the latter being strongly annulated; tibiae and patellae all carry fringes of orange hairs ventrally, the fringe on tibia I running the whole length of the segment, whereas those on tibiae II, III, IV, tend to be located basally and apically; spines typical, moderately strong and numerous.

Measurements in mm.

Leg	Fem.	Pat.	Tib.	Met.	Tars.	Total
I	3.4	1.5	3.4	4.3	1.8	14.4
II	2.9	1.3	2.3	2.9	1.2	10.6
III	2.5	1.1	1.5	2.3	1.0	8.4
IV	3.5	1.3	2.9	4.6	1.1	13.4

The thickness of metatarsus I is about 1/25 compared with 1/8 for tibia I (cf. corresponding ratios for *P. schultzei*).

Palp: Femur orange; patella and tibia yellow, covered with white hairs, very long and dense on pro-lateral side; cymbium basally dark orange, apically light yellow-orange covered with white hairs; basal edge of cymbium and edge of cymbial flange are dark brown-black. Drawings showing various comparisons between the palps of all three species are given in Figs. 6-15. For *P. orientalis* the central finger-like apophysis on the ventral side of the palpal tibia (Fig. 6) is very pale, small and quite difficult to

locate, being hidden in a tuft of long white hairs — those of *P. assamensis* and *P. labiata*, are darker coloured, larger and easily seen. The tegular apophysis of *P. orientalis* is not as pronounced as that of *P. labiata*, but perhaps this character is somewhat variable as the *P. assamensis* drawn (Fig. 7) has no visible tegular apophysis unlike the one figured in Wanless (1978: fig. 10 D). The embolus of *P. orientalis* narrows gradually from the basal section as shown in Fig. 17, whereas for *P. assamensis* the embolus is essentially narrow for all its length whilst the embolus of *P. labiata* narrows quite suddenly as depicted in Figs. 16, 18 respectively.

Distribution

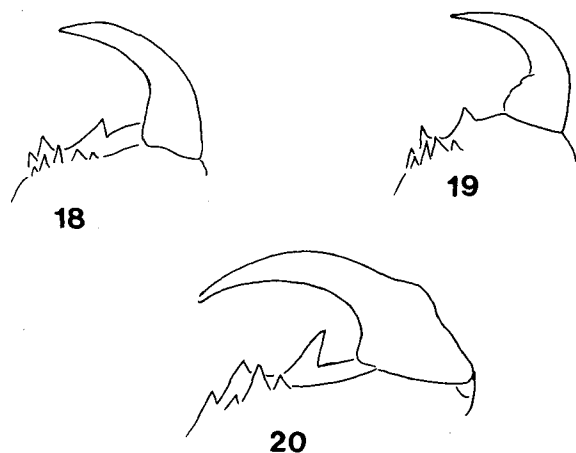
Hong Kong. Known only from the holotype.

Portia assamensis Wanless (Figs. 7, 10, 13, 15, 18)

Portia assamensis Wanless 1978: 105, figs. 10 D-F, 11 D-F.

New record

MALAYA: Penang, ♂, Aug. 1979 (J. & F. Murphy, vial 8286).



Figs. 18-20: Cheliceral teeth, male left chelicerae viewed from behind. 18 *Portia assamensis* Wanless; 19 *P. labiata* (Thorell); 20 *P. orientalis* sp. n.

Portia labiata (Thorell) (Figs. 8, 11, 14, 17, 19)

Sinus fimbriatus Doleschall: Hasselt, 1882: 50, pl. V, fig. 16. (misidentification)

Linus labiatus Thorell, 1887: 354, ♀. Thorell, 1895: 359. Simon, 1901a: 409-410; 1903: 749.

Linus (?) *dentipalpis* Thorell, 1890: 35, ♂. Thorell, 1892: 352, 475. Simon, 1901a: 410; 1903: 749, 1048.

Erasinus labiatus: Simon, 1903: 749, 754. Roewer, 1954: 1068. Bonnet, 1956: 1725. Prószyński, 1971: 401.

Portia labiata: Wanless, 1978: 103, figs. 10 A-C, 11 A-C.

In Malaya and Penang we found *P. labiata* in low shrubs and on the wall of a house.

New records

SRI LANKA: 2 ♀, ♂, Tilg. 20 Nov. 1960 (R. Sherriffs) Zool. Museum DK., Copenhagen.

INDIA: Coore, 2 ♀, Tilg. 20 Nov. 1960 (R. Sherriffs) Zool. Museum DK., Copenhagen.

PHILLIPINES: Palawan, Mantalingajan, Pinigisan 600 m, ♂, 2 Sept. 1961, Noona Dan Exp. 61-62, Zool. Museum DK., Copenhagen.

MALAYA: Layang-Layang, July 1979 (J. & F. Murphy, vial 7624, 7404, 7733).

MALAYA: Penang, Aug. 1979 (J. & F. Murphy, vial 9605).

Portia fimbriata (Doleschall)

Salticus fimbriatus Doleschall, 1859: 22, pl. 5, fig. 2, ♂ ♀. *Attus fimbriatus* Hasselt, 1877: 54.

Sinus fimbriatus Thorell, 1878: 270; 1881: 499, 707; 1895: 359.

Linus fimbriatus Karsch, 1891: 299. Thorell, 1892: 352, 475. Simon, 1901a: 409-411; 1901b: 70. Strand, 1909: 97; 1911: 177. Rainbow, 1911: 278. Petrunkevitch, 1928: 181. Sherriffs, 1931: 538; 1939: 196. Roewer, 1954: 935. Bonnet, 1957: 2482. Chrysanthus, 1968: 49, figs. 1-6. Prószyński, 1971: 425.

Linus alticeps Pocock, 1899: 117, fig. 14, ♀. Simon, 1901a: 410. Rainbow, 1913: 14. Blumenthal, 1935: 711. Roewer, 1954: 936. Bonnet, 1957: 2482. Prószyński, 1971: 425. *Boethoportia ocellata* Hogg, 1915: 502, fig. 1, ♂ ♀. Petrunkevitch, 1928: 181. Roewer, 1954: 933. Bonnet, 1955: 892. Prószyński, 1971: 385.

Portia fimbriata: Wanless, 1978: 99, figs. 7 A-G, 8 A-F, pls. 3a-f, 4c-f, 5c, d, f.

New records

SRI LANKA: ♂, Tilg. 20 Nov. 1960 (R. Sherriffs)
Zool. Museum DK., Copenhagen.

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