

## A review of the genus *Mantisatta* (Araneae: Salticidae)

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The poorly known oriental jumping spider fauna contains many endemic genera, some with remarkable morphological features, including the genus *Mantisatta* Warburton. The caudal process found in *Mantisatta* is exceptional in the Salticidae, and this coupled with the grotesque enlarged first legs and the slender bodies, make for a unique appearance.

Almost nothing is known about the biology of the members of this genus. Warburton (1900) thought it probable that the type of *M. trucidans* Warburton had come from a termite nest and that the spider sits passively waiting for prey, the size of the first legs precluding the usual pouncing prey-capture of salticids. While it is obvious that the first legs are raptorial, it would be wrong to rule out completely a short pounce over the last millimeter or so. We will have to wait for observations on living specimens to elucidate this detail. The first legs in preserved specimens are reminiscent of the legs of crab spiders, in that the morphologically dorsal side is in reality, the prolateral side.

Allometric growth may play a role in the development of the caudal process, which is relatively much longer in the larger *M. longicauda* n. sp., than in the smaller *M. trucidans*.

Sexual differences are especially apparent in the coloration; the male of *M. longicauda* is a dark spider whereas the females of both species are pale. The first leg in the male is slimmer as compared to that of the female, and is as long as the total body length.

### *Mantisatta* Warburton

*Mantisatta* Warburton, 1900, *Proc. zool. Soc. Lond.* 1900, pp. 384-387. Type species by original designation, *Mantisatta trucidans* Warburton.

*Description:* Salticids of moderate size, 4 - 10 mm total length. Carapace longer than wide. Cervical

fovea absent. Height of clypeus 3 - 30% diameter of AME. Eyes in four distinct rows. Chelicerae small, slightly divergent, outer margin lacking teeth, inner margin with 1 - 3 teeth. Leg order 1423 or 1432. Leg I enlarged, with two pairs of stout spines on metatarsus, and three pairs on tibia. Trochanteral limuli rounded. Abdomen long and slender with a distinct caudal process. Epigynum very small with two spermathecae. Palpal tibia of male with one simple apophysis. Embolus a small circular coil, originating on distal surface of tegulum.

*Diagnosis:* May be distinguished from all other genera of salticids by the combination of the following characters: eyes in four rows, enlarged raptorial first legs, and caudal process.

On the basis of having four eye rows, it might be argued that this genus is better placed in the Lyssomanidae. However, the structure of the male palpus of *Mantisatta* differs from that of lyssomanids, lacking the conductor and median apophysis of *Lyssomanes*, and the tegular structure of *Asamonea*. Furthermore, there is no fovea on the carapace in *Mantisatta*, and the third eye row in *Mantisatta* is placed differently than in the lyssomanids. For the moment, therefore, it is better to leave *Mantisatta* in the Salticidae, until our knowledge of lyssomanids is better understood.

### Key to Species of *Mantisatta*

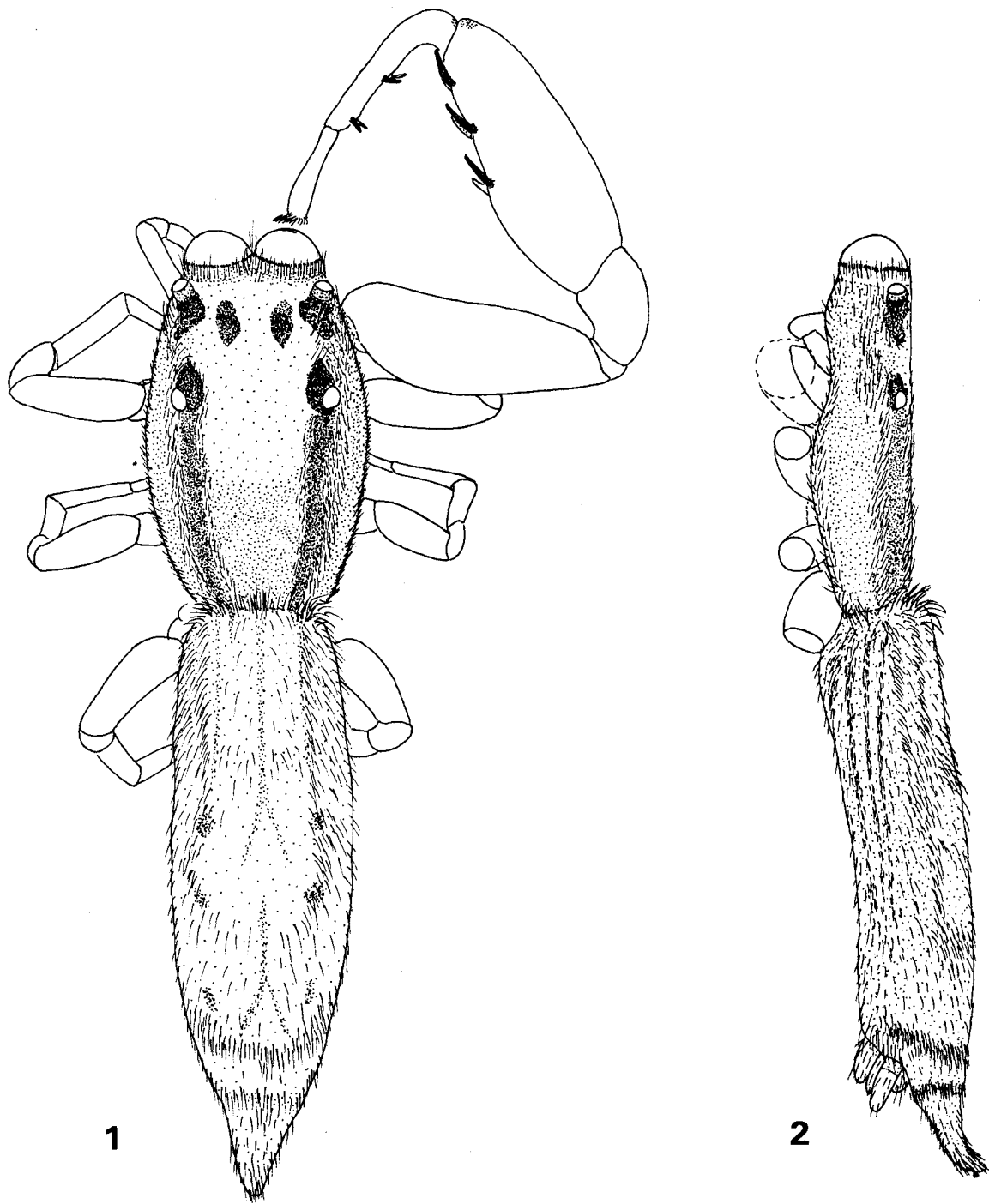
Carapace less than 1.5 mm long, caudal process 1/3 as long as rest of abdomen anterior to spinneret bases; in female, spermathecae as seen from outside distinctly separated medially; Sarawak, - *M. trucidans* Warburton.

Carapace greater than 2 mm long, caudal process as long as rest of abdomen anterior to spinneret bases; in female, spermathecae as seen from outside touching medially; Luzon, Philippine Islands - *M. longicauda* n.sp.

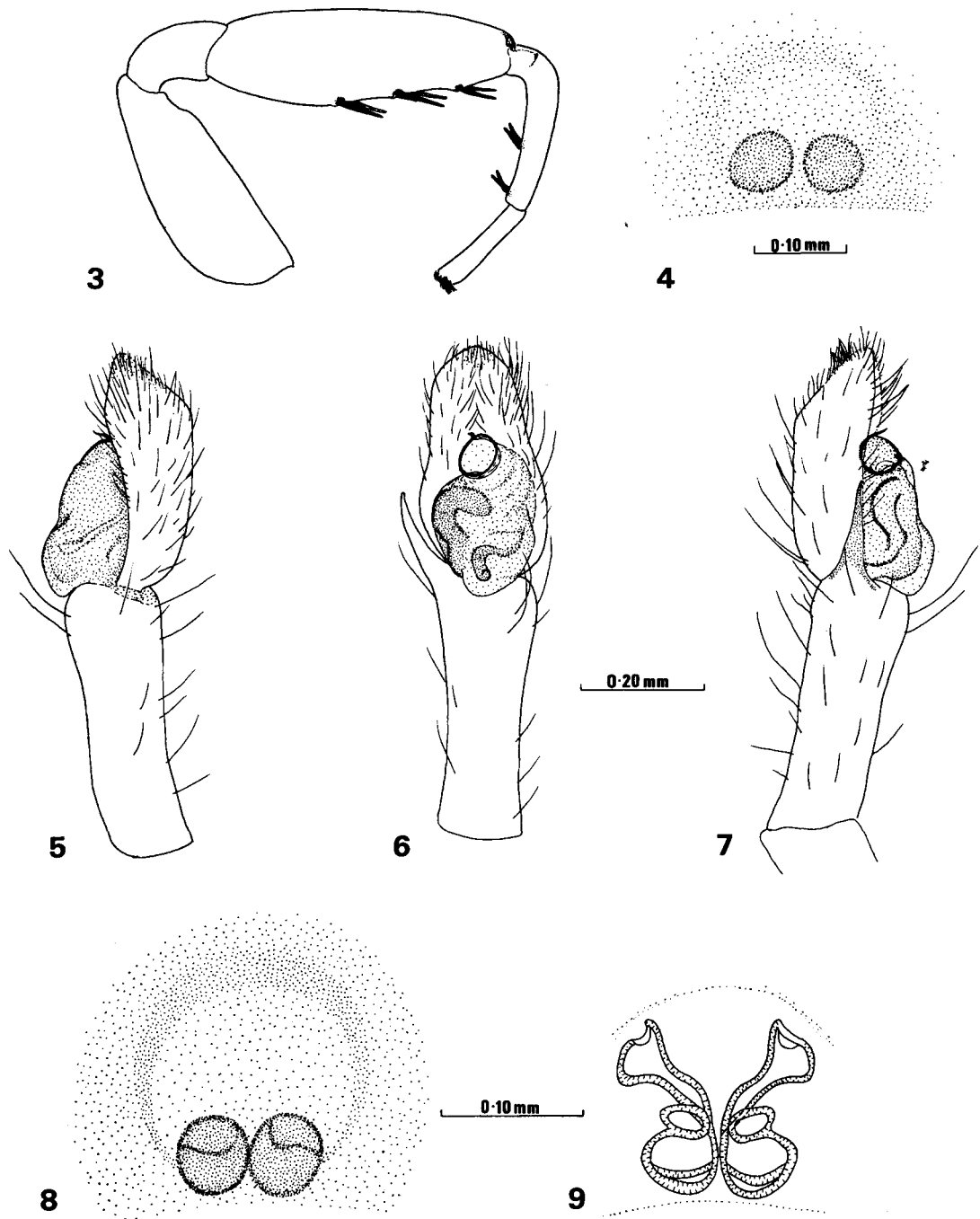
### *Mantisatta trucidans* Warburton. Figs 1-4

*Mantisatta trucidans* Warburton, 1900, *Proc. zool. Soc. Lond.* 1900, pp. 384 - 387, figs 1 - 4. Female holotype from Sarawak, in the University Museum of Zoology, Cambridge; examined. Male unknown.

FEMALE: total length 3.88 mm; carapace, length 1.4 mm, width 0.94 mm, height 0.38 mm; abdomen, length 2.45 mm, width 0.75 mm, height 0.44 mm.



Figs. 1-2. *Manisatta trucidans* Warburton: 1 Female dorsal view; 2. Female lateral view.



Figs. 3-4. *Mantisatta trucidans* Warburton: 3. Female Leg I, prolateral view; 4. Female epigyne.

Figs. 5-9. *Mantisatta longicauda* n.sp.: 5. Right male palpus, prolateral view; 6. Right male palpus, ventral view; 7. Right male palpus, retrolateral view; 8. Female epigyne; 9. Internal view of vulva.

*Carapace*: low and flat protruding anteriorly beyond chelicerae, longer than broad in ratio of 46:30, greatest breadth about level of coxae II. Fovea absent. Cuticle weakly punctured; yellow-brown; with pair of dusky stripes obscurely margined with whitish hairs extending from PLE to posterior margin; anterior part of thorax and area within quadrangle light yellow, with two blackish patches between the median eyes; lateral margins fringed with white hairs.

*Eyes*: in four distinct rows, quadrangle forms almost an exact square, 0.59 mm long occupying 42% of the length of carapace. Anterior row 0.55 mm wide, contiguous, on tubercles, fringed with white hairs, occupying the full breadth of facies. Anterior lateral row 0.68 mm wide, about 0.62 mm from AME, on tubercles, fringed with white hairs, surrounded with black that is confluent with PME; seen from in front, contiguous with AME with their apices more or less level. Posterior median row 0.65 mm wide, slightly closer to ALE than to PLE in ratio of 6.5:6. Posterior lateral row 0.69 mm wide, narrower than carapace at that point, fringed with white hairs, surrounded by black. Ratio of diameters of AME:ALE:PME:PLE = 9:3:1:3.

*Clypeus*: slightly concave, equal to about 0.27 diameter of AME, nearly parallel with plane of quadrangle.

*Chelicerae*: small, vertical, slightly divergent, yellowish with a central brownish band on the anterior face; fang small, evenly curved; outer margin of groove without teeth, inner margin with three minute teeth.

*Maxillae*: slightly convergent, longer than broad in the ratio of 10:5, outer margin slightly concave, more or less rounded: yellowish, grey margins.

*Labium*: subtriangular, broader than long in ratio of 8:5; yellowish suffused with grey.

*Sternum*: scutiform, longer than broad in ratio of 20:14, slightly convex, anterior margin concave, slightly wider than base of labium in ratio of 9:8, lateral excavations lacking, posterior margin bluntly pointed extending slightly between coxae IV which are separated by about half their diameter; pale yellow with smooth texture.

*Abdomen*: much longer than broad, a depressed cylinder with a caudal process that obscures the spinnerets from dorsal view; pale yellow, finely

pubescent; as the pattern has faded, Warburton's description is given here, "along the first half of the abdomen there is a median line, forking posteriorly. This is succeeded by a shorter line which forks similarly and behind this there is a transverse line. On each side of the central marking there are a series of dots, the distribution of which is shown in figure 1." Spinnerets subequal, moderately long, anterior pair stoutest, posteriors about twice their diameter apart. Anal tubercule a short broad cone with bristles.

*Epigyne*: fig. 4, very small with an obscure median depression over a pair of yellow-brown spermathecae, which are distinctly separated medially.

*Vulva*: of this unique specimen not examined.

*Palp*: moderately long, light yellow.

*Legs*: light yellow with black claw tufts, sparsely covered with fine hairs; legs I much larger than the rest with tibia, patella and femur enlarged and laterally compressed (fig. 3); tibia with three pairs of ventral spines directed forwards; metatarsi inflected sub-basally with two pairs of ventral spines directed backwards; remaining legs slender, lacking spines.

Leg	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
I	0.4	0.82	1.12	0.43	1.1	3.87
II	0.24	0.31	0.37	0.28	0.5	1.7
III	0.24	0.34	0.31	0.24	0.47	1.6
IV	0.31	0.46	0.53	0.34	0.65	2.12
Palp	0.25	—	0.16	0.18	0.43	1.02

Leg order 1432. Measurements in millimetres.

*Diagnosis*: see key to species.

### *Mantisatta longicauda* n.sp. Figs 5 - 9.

Male holotype and female paratype from Lingayen, Luzon, Philippines, June - July, 1945, R. B. Burrows, deposited in the American Museum of Natural History, New York.

MALE: total length 0.94+ mm (caudal process broken at distal end): carapace, length 2.31 mm, width 1.31 mm, height 0.50 mm; abdomen, length 7.66+ mm, width 1.08 mm, height 0.55 mm.

*Carapace*: low, flat, protruding anteriorly beyond chelicerae, longer than broad in ratio of 53:30, greatest breadth about level of third eye row. Fovea absent. Cuticle weakly punctured; brown, with a pair of orangish stripes weakly margined with scattered white hairs, extending from ALE to posterior margin; black patches surround anterior eyes and PLE.

*Eyes*: in four distinct rows; quadrangle wider than long, 0.77 mm long occupying 33% of carapace length. Anterior median row 0.75 mm wide, contiguous, on tubercles, occupying full breadth of facies. Anterior lateral row 0.93 mm wide, 0.82 mm from AME, on tubercles, seen from front, separated from AME by about 0.1 mm. Posterior median row 0.90 mm wide, slightly closer to ALE than PLE in ratio of 5:6.5. Posterior lateral row 0.93 mm wide, narrower than carapace at that point. Ratio of diameters of AME:ALE:PME:PLE = 12:4:1:4

*Clypeus*: equal to about 0.03 diameter of AME, nearly parallel with plane of quadrangle, brown.

*Chelicerae*: small, vertical, divergent, orange; fang small, evenly curved; outer margin of groove without teeth, inner margin with one small tooth.

*Maxillae*: slightly convergent, longer than broad in middle in ratio 16:7, outer margin slightly concave, blades rounded, dark brown, white tips.

*Labium*: subtriangular, broader than long in ratio of 7:4, brown, white tip.

*Sternum*: longer than broad in ratio of 2:1, convex, anterior margin concave, wider than base of labium in ratio of 10:9, lateral excavations poorly developed, posterior margin bluntly pointed, extending between coxae IV, which are separated by half their diameter; brown.

*Abdomen*: long and extremely narrow, flattened cylinder with long caudal process obscuring spinnerets from dorsal view; caudal process about as long as rest of abdomen from base of spinnerets, estimated that 0.5 mm broken off tip; caudal process grey-brown, rest of abdomen covered dorsally with dark brown scutum, blue-black iridescent under certain light conditions, venter yellow-white. Spinnerets about equal length, long, anterior pair stoutest, posteriors about twice their diameters apart. Anal tubercle short broad cone with bristles.

*Palp*: long, slightly longer than leg III: femur longer than rest of palpus, forming a long thin triangle widest at proximal end; thin spikelike lateral tibial apophysis, 1/3 length of cymbium; femur brown, rest yellow; embolus small circular coil (figs 5-7).

*Legs*: first pair longest, raptorial, essentially as in fig. 3, but much longer and proportionally narrower in this sex, spines as in fig. 3. Colour of femur, tibia, patella of leg I, dark orange; metatarsus brown, tarsus

yellow with black claw tufts. Remaining legs slender, yellow with black claw tufts.

Leg	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
I	1.01	1.50	2.85	0.90	2.77	9.03
II	0.30	0.61	0.90	0.36	0.87	3.04
III	0.29	0.60	0.50	0.39	0.83	2.61
IV	0.30	0.67	0.90	0.38	0.97	3.22
Palp	0.37	—	0.52	0.60	1.40	2.89

Leg order 1423. Measurements in millimetres.

**FEMALE**: total length 7.48 mm; carapace, length 2.15 mm, width 1.16 mm, height 0.57 mm; abdomen length 5.39 mm, width 1.20 mm, height 0.61 mm.

*Carapace*: as in male with following differences, longer than broad in ratio of 54:30. Background yellow-white with six very faint brown longitudinal lines, at side lines are thicker, space between lines at side with white hairs. Black patches surround all eyes.

*Eyes*: in four distinct rows; quadrangle wider than long, 0.71 mm long occupying 33% of length of carapace. Anterior median row 0.71 mm wide, rest as in male. Anterior lateral row 0.88 mm wide, 0.75 mm from AME, on tubercles, from front lower margin of ALE on same level as upper margins of AME. Posterior median row 0.88 mm wide, closer to ALE than PLE in ratio of 5.75:8. Posterior lateral row 0.92 mm wide, narrower than carapace at that point. Ratio of diameters of AME:ALE:PME:PLE = 12:3 1/3:1:4.

*Clypeus*: equal to about 0.08 diameter of AME, otherwise as in male.

*Chelicerae*: slightly divergent, yellow-white, otherwise as in male.

*Maxillae*: longer than broad in middle in ratio of 13:8, yellow-white, otherwise as in male.

*Labium*: broader than long in ratio of 8:5, yellow-white.

*Sternum*: longer than broad in ratio of 5:3, yellow-white, otherwise as in male.

*Abdomen*: caudal process about 2/3 length of rest of abdomen from base of spinnerets, yellow-white with six thin, feint brown lines converging at base of caudal process, process getting progressively darker with merger of lines to solid grey-brown just before tip, which is white; otherwise as in male.

*Epigyne*: small, spermathecae touching medially, fig. 8.

*Vulva*: two spermathecae, complex ducts, fig. 9.

*Palp*: long, yellow-white.

*Legs*: leg I, very similar to leg I of *M. trucidans*, more robust than leg I of male, yellow-white; remaining legs slender, yellow with black claw tufts.

Leg	Tarsus	Metatarsus	Tibia	Patella	Femur	Total
I	0.44	0.95	1.40	0.68	1.17	4.64
II	0.27	0.39	0.46	0.29	0.45	1.86
III	0.21	0.48	0.53	0.33	0.57	2.12
IV	0.30	0.45	0.59	0.51	0.95	2.80
Palp	0.22	—	0.15	0.20	0.56	1.13

Leg order 1432. Measurements in millimetres.

*Diagnosis*: see key to species.

### Acknowledgements

We wish to thank Mr P. Swann for his aid as an intermediary, and Drs J. Smart and C. B. Goodhart, Dept. of Zoology, University of Cambridge, for the loan of the type of *M. trucidans*.

### References

- WARBURTON, C., 1900: On a remarkable attid spider from Borneo, *Mantisatta trucidans*, n.g. et sp. *Proc.zool.Soc.Lond.* 1900: 384-387

## On the affinity of the genus *Scotargus* Simon (Araneae: Linyphiidae)

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The confusion surrounding the type-species of the genus *Scotargus*, *S. pilosus* Simon, and its confounding with *Neriene inerrans* O.P.-Cambridge by Simon and most of the subsequent authors, has been clarified by Denis (1966). It is clear now that *Milleriana inerrans* (O.P.-Cambridge, 1885), a distinctly erigonid species with *Trichoncus strandi* Schenkel, 1929, among others, as junior synonym, is obviously different from *Scotargus pilosus* Simon, 1913, which has *Oreonetides strandi* Schenkel, 1934, among its synonyms. However, Denis did not enter into the matter of the generic affinity of *Scotargus*, and it is on this interesting problem that I would like to comment here.

In the course of a recent study of the genus *Oreonetides* I examined *Oreonetides strandi* Schenkel, described from Switzerland (Schenkel, 1934). The females in the Schenkel collection at

Basel did not fit in with my conception of the Erigonidae, where the genus *Scotargus* belongs according to Denis (1966) and Saaristo (1972).

A number of males from Czechoslovakia, received from Prof. Dr F. Miller of Brno, whose helpfulness is gladly acknowledged here, were found to confirm my dissenting views. The epigyne is too elaborate a structure, the fourth tibia bears two dorsal spines and the anterior tibiae (I and II) each bear a retro-lateral spine. Add to this the presence of a metatarsal spine on the anterior metatarsi (I and II) and we have a combination of characters that makes a direct relationship with the Erigonidae very unlikely.

If we compare the diagnostic characters of the monotypic *Scotargus*, which will be enumerated below, with those of *Sintula* Simon, we cannot fail to notice a number of striking resemblances between the two genera. Denis (1967) devoted a paper to *Sintula*, illustrating all known species. The generic characters of *Sintula* with which *Scotargus* is compared here, are largely taken from his paper. However, he did not dissect any palps or take out epigynes and examine the internal structures. I am convinced that had he done so this might have led him to the same conclusions presented here.