

Taxonomic position of the genus *Meta* (Araneida)

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PALMGREN, P. 1978: Taxonomic position of the genus *Meta* (Araneida). — Ann. Zool. Fennici 15:241—242.

Spiders of the family Tetragnathidae have anterior and posterior dorsal intestinal caeca and the ventral caeca extend not only to the coxae of the legs but also to the chelicera and the pedipalpal coxa. Spiders of the family Araneidae (= Argiopidae) as well as *Meta* have only anterior dorsal caeca and the ventral caeca extend only to the coxae of the legs. This is a strong argument in favour of retaining *Meta* in Araneidae.

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LOCKET *et al.* (1974) placed the genus *Meta* in Tetragnathidae. The transfer from Araneidae was based especially on the simple structure of the genitalia. SIMON (1929) had already referred *Meta* to his subfamily Tetragnathinae.

During a study of the muscles of the prosoma in spiders (ca. 50 species representing most families of the European fauna) my attention was caught by differences in the arrangement of the intestinal caeca between Araneidae and Tetragnathidae.

In the Araneidae studied (*Araneus cornutus*, *Araniella displicata*, *Zygiella stroemi*, *Cyclosa conica*, *Cercidia prominens*, *Singa sanguinea*) ventral caeca run only to the coxae of the legs (they are known to extend to the space between the sternum and the ventral ganglion mass), and they have only one, bladderlike caecum in front of the dorsal apodeme. The left and right dorsal caeca may be fused (Figs. 1—6).

The Tetragnathidae studied, i.e. *Tetragnatha extensa*, *T. striata* (placed by many authors in a genus of its own, *Eugnatha*), *Pachygnatha listeri* and *P. clercki*, have much bulkier ventral caeca than the Araneidae and also caeca extending

into the chelicera (all species) and the pedipalpal coxae (all species except *T. striata*). They also have a posterior, unpaired dorsal caecum occupying the space behind the dorsal apodeme and between the tergo-coxal muscles of legs III—IV (Figs. 7—9). These features were found in no other families studied by me.

In these respects *Meta* (*merianae* and *segmentata*, Figs. 10—11) resembles the Araneidae, except that in *M. segmentata* the dorsal caecum seems to have been suppressed by the extremely bulky poison glands. The caecum extending to the base of coxa I has a greater volume than the others, and perhaps compensates for the lacking dorsal caecum (Fig. 10).

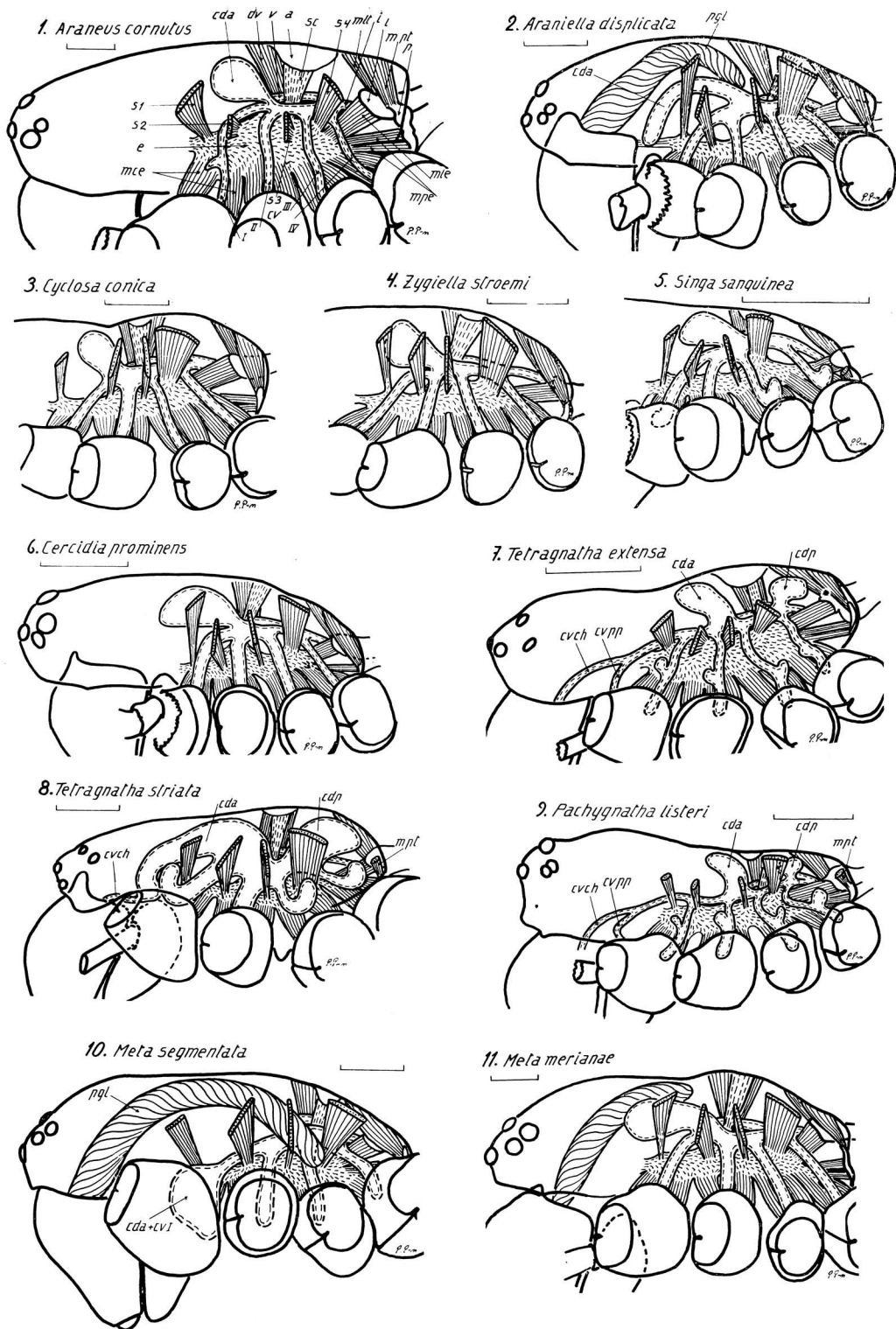
Although internal anatomical features cannot take precedence over external ones as taxonomic characters, the difference in the development of the intestinal caeca between the Araneidae and the Tetragnathidae is so striking that it argues in favour of retaining *Meta* in the Araneidae. It can hardly be explained by any difference in the food. Attention may also be drawn to the femoral trichobothria of the Tetragnathidae, not present in *Meta* or in Araneidae in general.

References

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Received 18. V. 1978

Printed 30. IX. 1978



Figs. 1–11. Intestinal caeca of Araneida and Tetragnathidae (*Araneus cornutus*, *Araniella displicata*, *Cyclosa conica*, *Zygiella stroemi*, *Singa sanguinea*, *Cercidia prominens*, *Tetragnatha extensa*, *T. (Eugnatha) striata*, *Pachygnatha listeri* (*P. clercki* has the same structure), *Meta segmentata* and *M. merianae*). All figures were drawn from females. The coxo-tergal muscles (Palmgren 1978; anterior rotators, anterior and posterior levators of earlier authors) were removed. The cheliceral and pedipalpal musculature and the supra-oesophageal ganglion mass (Palmgren 1978; anterior rotators, anterior and posterior levators of earlier authors) were removed. The poison gland was drawn only if extending caudad of the pedipalpal musculature.

Scale = 0.5 mm. Abbreviations: *a* = dorsal apodem, *cda* = anterior dorsal caecum, *cdp* = posterior dorsal caecum, *cvch* = ventral caecum of chelicera, *cvpp* = ventral caecum of pedipalp, *cv I–IV* = ventral caeca of legs I–IV, *dv* = dilator ventriculi, *e* = endosternum, *i* = intestinum, *l* = lorum, *mece* = coxo-endosternal muscles, *mle* = loro-endosternal muscle, *mlt* = loro-tergal muscle, *mpe* = plagulo-endosternal muscle, *mpt* = plagulo-tergal muscle, *p* = plagula, *sc* = suspensor centralis, *s I–IV* = suspensors I–IV, *v* = ventriculus.