

Capture-web building male spiders: the morphology of the spinning organs of *Comaroma simonii* Bertkau, 1889 (Arachnida, Araneae, Anapidae).

Fangnetzbauende Spinnenmännchen: Die Morphologie der Spinnorgane von *Comaroma simonii* BERTKAU, 1889 (Arachnida, Araneae, Anapidae).

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The morphology of the enigmatic spiders of the family Anapidae is insufficiently known. For example, almost no data exist about the spinning organs. Thus, these structures were studied in the small soil-inhabiting spider, *Comaroma simonii* Bertkau, 1889, in male and female specimens from Styria, Austria, by using SEM and compound microscopy. The spigots were associated with the different types of silk glands according to Coddington J A (1989: J Arachnol 17, 71) and their function was estimated in the sense of Peters H M (1955: Z Naturforsch 10b.7, 395), Kovoov J (1977: Ann Biol 16, 97) and Coddington (loc cit).

The three pairs of spinnerets, the colulus and the anus are surrounded by a sclerotized ring that bears the tracheal spiracles. The **anterior lateral spinnerets** (ALS) are the biggest. They are two-segmented and show nine piriform gland spigots, surrounded by a semi circle of serrate hairs which originate on a distinct sclerite. Six of those spigots, which are used to attach threads together or to the substrate, are arranged in a semi circle, surrounding the remaining three. In addition there is a big ampullate gland spigot, used for draglines and major structural threads. It is surrounded by a sclerite and shows a cuticular knob adjacent to it. The structure of the ALS is the same in males and females.

The **posterior median spinnerets** (PMS) are one-segmented and the smallest of the three pairs of spinnerets. They bear one aciniform gland spigot, used for different kinds of threads in Araneoidea, like prey wrapping, egg sac and retreat threads. Moreover, there is one ampullate gland spigot. A third spigot is present in females exclusively. It is a cylindrical (tubuliform) gland spigot, used for spinning the egg sac.

The **posterior lateral spinnerets** (PLS) are two-segmented and show three (males) or four types (females) of spigots. On the inner (mesal) side there is a large cylindrical gland spigot in females, but not in males. It has a strikingly enlarged base. Close to it there is an aciniform gland spigot, present in both sexes. The remaining spigots are surrounded by a horseshoe-like sclerotized area. Another cylindrical gland spigot with a normal base is situated most anteriorly in females and is lacking in males. Finally, the araneoid triad is present in both sexes. It consists of two aggregate gland spigots, producing the viscid glue of the capture thread, and of one flagelliform gland spigot, used for the basic line of the capture thread. The aggregate gland spigots are not modified, i.e. enlarged, like in Theridiidae and Nesticidae (Coddington, loc cit).

The most striking result is the presence of the triad on the PLS in adult males, since this feature is commonly thought to be restricted to juveniles and adult females (Coddington J A 1989: loc cit, Sekiguchi K 1955: Sc Rep TKD Sect B 8, 23, and others). Apart from the complete absence of cylindrical gland spigots, males show the same numbers and arrangements of the other types of spigots as females. Moreover it is worth noting that the numbers of ampullate, cylindrical, flagelliform and aggregate gland spigots are the same as in most other Araneoidea (Coddington, loc cit), while the piriform, and especially the aciniform gland spigots (only two of them in *Comaroma*) are greatly reduced. These morphological facts are in accordance with biological observations: Adult males of *C simonii* are able to build normal capture webs and also catch prey (mainly Collembola) with it (Kropf C 1990: Acta Zool Fennica 190, 229). During prey capture, no wrapping behaviour was observed (Kropf, loc cit); this could explain the low number of aciniform gland spigots.

The few data on anapid spinneret morphology suggest low variation of the ALS and PMS, but high intergeneric variation of the PLS within the family. The PMS of *Novanapis* and *Crassanapis* show only one aciniform and one ampullate gland spigot in males (Platnick N et al 1991: Amer Mus Novitates 3016, 1) as it is the case in *Comaroma*. The PLS of males in *Novanapis* and *Crassanapis* appear to bear aciniform gland spigots only, and the araneoid triad seems to be absent or uncomplete even in females of the two genera (Platnick et al, loc cit).

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