SEXING TARANTULAS REVISITED

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Every couple of years, enough new ATS members haven't heard the latest on sexing immature tarantulas. Below is the latest update on determining sex.

To get a professional sexing of a specimen, Dr. Fred Sherberger is willing to sex your tarantula from molts. Place a newly molted exoskeleton (legspan needs to be over two inches) into a plastic baggie with a few drops of alcohol. Double bag it, pack it so that the chance of crushing or deformation is minimal, and send it to Dr. Fred Sherberger, 3305 David RD, Atlanta, GA 30341-4354. Be sure to include your email address so that Fred can inform you of his results.

Knowing the sex of a tarantula as early as possible in its development is important for almost every keeper. The lifespan of an adult male may be as short as a few weeks, to two years or more depending upon species and conditions in captivity. Most males, especially burrowing species, will not last more than six months to a year and a half under ideal conditions. Females may live 10, 20, even 30 or more years depending on the species. The longer lifespan makes females worth more. Many potential tarantula buyers require females only. However, the ATS is frequently told about tarantulas sold as guaranteed females ultimately molting into males. If males were sold deliberately as females, perhaps this article may help the buyer quickly exchange the male for a female. If done accidentally, as we hope most of these incidents are, then this article could help the sellers determine sex.

At least three major methods to determine the sex of tarantulas are currently used. Sexing adults is simple for adult males because most have the distinctive tibial spurs on the underside of the front legs. The male pedipalps, though not as obvious as in other male spiders, are still plainly thickened, and not as leg-like as in the females and immatures.

Female tarantulas can be trickier. In some groups, as with most widow spiders, (*Latrodectus*) the female genital openings are black and hardened (sclerotized). Adult females can be separated from immatures quickly. Also, male and female widow spiders begin developing a body shape characteristic of the individual's sex early in their development. This is not the case with tarantulas. The remainder of this article will focus on immature tarantulas.

Sexing By Chelicerae Shape

The first method (and the least reliable) is determining the sex by the relative size and shape of the chelicerae. The chelicerae of females are larger, wider, and more robust than in males. Male chelicerae are thinner and less broad. Female chelicerae tend to be more bulbous, or swollen; male chelicerae appear slimmer and uniform.

Getting the hang of sexing immatures this way may take a lot of experience raising larger immatures, but it can work. I've had success using the method with *Aphonopelma* and *Brachypelma* species. It may be appropriate for more genera.

Sexing By Cast “Skins”

Prior to a molt, the tarantulas’ body will dissolve and resorb as much of the exoskeleton as it can. The exoskeleton is composed of different types of cuticle. The soft, pliable endocuticle is resorbed, but the hardened exocuticle is not resorbed, nor is the thin epicuticle, which is deposited on top of the exocuticle on the surface of the body. (Some authors claim the endocuticle is divided into the endo and mesocuticle sections, but that will not be discussed here). Internal non-digestible parts of the cuticle, such as the foregut, hindgut and the sperm storage organ of the females (spermathecae) are also shed. The legs and cephalothorax have a fairly thick exocuticle that easily retains its shape once shed. The abdomen has little or no hardened exocuticle, only a thick endocuticle. The endocuticle is recycled, leaving only the epicuticle to be discarded. This is why the shed cuticle of the abdomen is thin and membranous, and doesn’t retain its shape.

The females of almost all tarantula species have a pair of spermathecae. A few have only one. The spermathecae are located along the epigastric furrow internally. Using soapy water or alcohol to induce flexibility, the remains of the cuticle of the molted abdomen can be examined for the presence or absence of the shed spermathecae cuticle. It’s possible to see the spermathecae on larger specimens using a hand lens. With smaller immature tarantulas, a higher power stereomicroscope may be needed to spot them. Again, experience increases accuracy.

Sexing By Male Spinnerets

Male tarantulas and some other groups of spiders have silk-producing organs near their genital openings called epiandrous glands. These glands lead out to tiny spinneret spigots in a crescent shape above the epigastric furrow. These tiny spigots, along with an accompanying dense patch of setae, form a “half moon” shape. This telltale structure is easy to see in some species, but is very difficult to see in others. Some report they can spot the structure in even small immature males with the naked eye.

In *Aphonopelma anax*, a high power stereomicroscope is often needed, even with adult males. So determining sex using this method may not be applicable to all species.

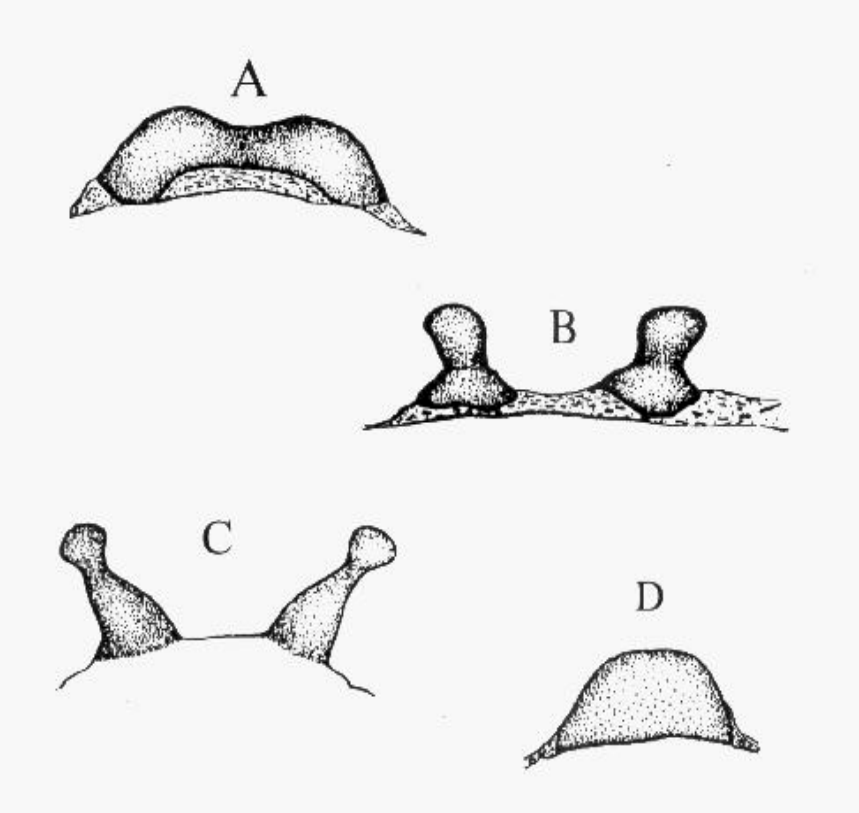

Figure 1.—Some examples of different spermathecae shapes. A) *Brachypelma emilia* B) *Cyclosternum schmardae* C) *Grammostola mollicoma* D) *Theraphosa blondi*. After Perez-Miles et al. 1996. Mygalomorph 1: 33-68.

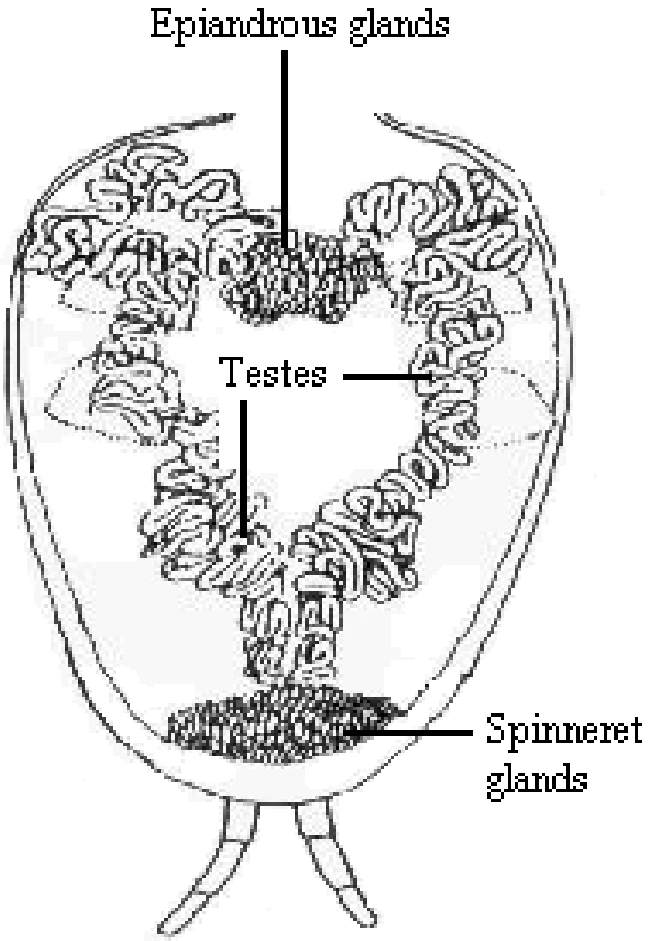

Figure 2.—Internal illustration of a male *G. mollicoma.* After Marples 1967. J. Linn. Soc. Zool. 46(310): 1-209.

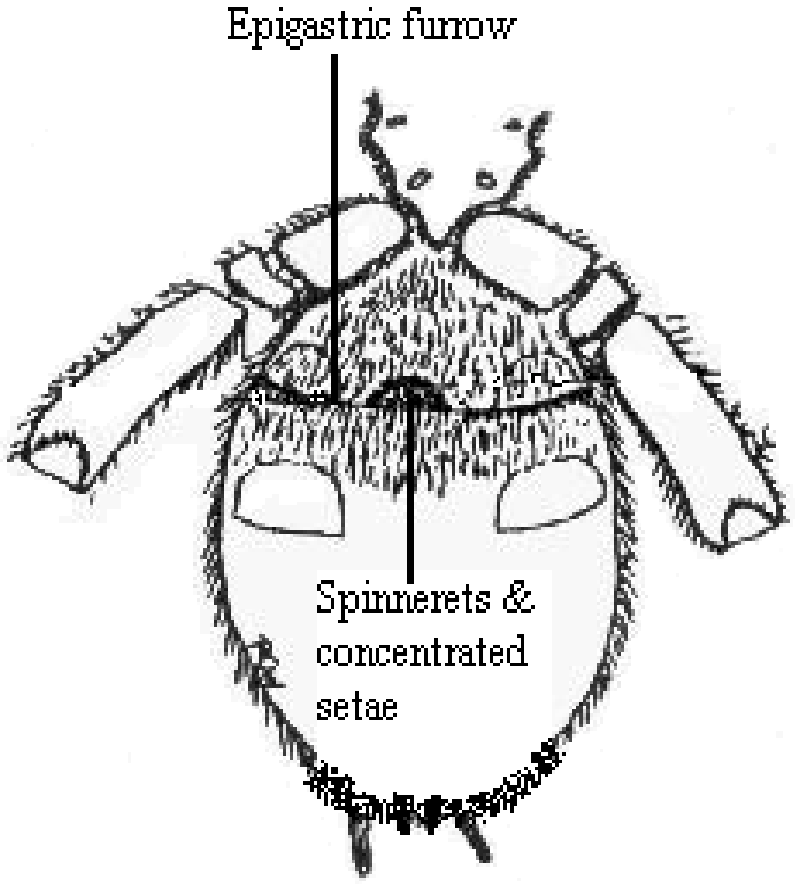

Figure 3.—Ventral view of a male theraphosid. After a drawing by Rick C. West.